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LOGIC:

OR, THE

RIGHT USE OF REASON,

IN THE

INQUIRY AFTER TRUTH.

WITH

A VARIETY OF RULES TO GUARD AGAINST ERROR IN THE AFFAIRS OF RELIGION AND HUMAN LIFE, AS WELL AS IN THE SCIENCES.

By ISAAC WATTS, D. D.

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TO

SIR JOHN HARTOPP, Baronet.

SIR,

IT is fit the public ſhould receive through your hands what was written originally for the aſſiſtance of your younger ſtudies, and was then preſented to you.

It was by the repeated importunities of our learned friend Mr. *John Eames*, that I was perſuaded to reviſe theſe *rudiments of logic*, and when I had once ſuffered myſelf to begin the work, I was drawn ſtill onward far beyond my firſt deſign, even to the neglect, or too long delay of other preſſing and important demands that were upon me.

It has been my endeavour to form every part of this treatiſe both for the inſtruction of ſtudents, to open their way into the ſciences, and for the more extenſive and general ſervice of mankind, that the *gentleman* and the *Chriſtian* might find their account in the peruſal as well as the *ſcholar*. I have therefore collected and propoſed the chief principles and rules of right judgment in matters of common and ſacred importance, and pointed out our moſt frequent miſtakes and prejudices in the concerns of life and religion, that we might better guard againſt the ſprings of error, guilt and ſorrow, which ſurround us in our ſtate of mortality.

You know, Sir, the great deſign of this noble ſcience is to reſcue our reaſoning powers from their unhappy ſlavery and darkneſs; and thus, with all due ſubmiſſion and deference, it offers an humble aſſiſtance to divine revelation. Its chief buſineſs is to relieve the natural weakneſſes of the mind by ſome better efforts of nature; it is to diffuſe a light over the underſtanding in our inquiries after truth, and not to furniſh the tongue with debate and controverſy.

fy. *True logic* is not that noify thing that deals all in difpute and wrangling, to which former ages had debafed and confined it; yet its difciples muft acknowledge alfo, that they are taught to vindicate and defend the truth, as well as to fearch it out. *True logic* doth not require a long detail of hard words to amufe mankind, and to puff up the mind with empty founds, and a pride of falfe learning; yet fome diftinctions and terms of art are neceffary to range every idea in its proper clafs, and to keep our thoughts from confufion. The world is now grown fo wife as not to fuffer this valuable art to be engroffed by the fchools. In fo polite and knowing an age, every *man of reafon* will covet fome acquaintance with *logic*, fince it renders its daily fervice to *wifdom* and *virtue*, and to the affairs of *common life*, as well as to the *fciences*.

I will not prefume, Sir, that this little book is improved fince its firft compofure in proportion to the improvements of your manly age. But when you fhall pleafe to review it in your retired hours, perhaps you may refrefh your own memory in fome of the early parts of *learning*: And if you find all the additional remarks and rules made fo familiar to you already by your own obfervation, that there is nothing new among them, it will be no unpleafing reflection that you have fo far anticipated the prefent zeal and labour, of,

SIR,

Your moft Faithful, and

Obedient Servant,

London, Aug. 24, 1724.

I. WATTS.

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INTRODUCTION,

AND

GENERAL SCHEME.

LOGIC is *the art of using* REASON* *well in our inquiries after truth, and the communication of it to others.*

REASON* is the glory of human nature, and one of the chief eminencies whereby we are raised above our fellow-creatures, the brutes, in this lower world.

Reason as to the *power* and *principles* of it, is the common gift of God to all men; though all are not favoured with it by nature in an equal degree: But the *acquired improvements* of it, in different men, make a much greater distinction between them than nature had made. I could even venture to say, that the *improvement of reason* hath raised the learned and the prudent, in the European world, almost as much above the *Hottentots*, and other savages of *Africa*, as those savages are by nature superior to the birds, the beasts, and the fishes.

Now, the *design of logic* is to teach us the right use of our *reason*, or *intellectual powers*, and the improvement of them in ourselves and others; this is not only necessary, in order to attain any competent knowledge in the *sciences*, or the affairs of learning, but to govern both the greater and the meaner *actions of life*. It is the cultivation of our *reason*, by which we are better enabled to distinguish *good* from *evil*, as well as *truth* from *falsehood*: And both these are matters of the highest importance, whether we regard this life, or the life to come.

The *pursuit* and *acquisition of truth* is of infinite concernment to mankind. Hereby we become acquainted with the

* The word REASON, in this place, is not confined to the mere faculty of reasoning, or inferring one thing from another, but includes all the intellectual powers of man.

the nature of things, both in heaven and earth, and their various relations to each other. It is by this means we discover our duty to God and our fellow-creatures: By this we arrive at the knowledge of *natural religion*, and learn to confirm our faith in *divine revelation*, as well as to understand what is revealed. Our wisdom, prudence, and piety, our present conduct, and our future hope, are all influenced by the use of our *rational powers* in the search after *truth*.

There are several things that make it very necessary that our reason should have some assistance in the exercise or *use* of it.

The first is the *depth and difficulty of many truths*, and the *weakness of our reason to see far into things at once, and penetrate to the bottom of them*. It was a saying among the ancients, *Veritas in puteo*, "Truth lies in a well;" and, to carry on this metaphor, we may very justly say, that *logic* does, as it were, supply us with steps whereby we may go down to reach the water; or it frames the links of a chain, whereby we may draw the water up from the bottom. Thus, by the means of many reasonings well connected together, philosphers in our age have drawn a thousand truths out of the depths of darkness, which our fathers were utterly unacquainted with.

Another thing that makes it necessary for our reason to have some assistance given it, is the *disguise and false colours in which many things appear to us in this present imperfect state*: There are a thousand things which are not in reality what they appear to be, and that both in the *natural* and the *moral* world: So the *sun* appears to be flat as a plate of silver, and to be less than twelve inches in diameter: The *moon* appears to be as big as the *sun*, and the rainbow appears to be a large substantial arch in the sky; all which are in reality gross falsehoods. So *knavery* puts on the face of *justice*, *hypocrisy* and *superstition* wear the vizard of *piety*, *deceit* and *evil* are often clothed in the shapes and appearances of *truth* and *goodness*. Now, logic helps us to strip off the outward disguise of things, and to behold them, and judge of them in their own nature.

There is yet a farther proof that our intellectual or rational *powers* need some assistance, and that is because they are

are so frail and fallible in the present state: We are imposed upon *at home* as well as *abroad:* We are deceived by our *senses*, by our *imaginations*, by our *passions* and *appetites*, by the *authority* of men, by education and custom, &c. and we are led into frequent errors, by judging according to these false and flattering principles, rather than according to the nature of things. Something of this frailty is owing to our very *constitution*, man being compounded of flesh and spirit: Something of it arises from our *infant-state*, and our growing up by small degrees to manhood, so that we form a thousand judgments before our *reason* is mature. But there is still more of it owing to our *original defection* from God, and the foolish and evil dispositions that are found in fallen man: So that one great part of the *design of logic* is to guard us against the delusive influences of our meaner powers, to cure the mistakes of immature judgment, and to raise us in some measure from the ruins of our fall.

It is evident enough, from all these things, that our *reason* needs the assistance of *art* in our inquiries after *truth* or *duty*; and, without some skill and diligence, in forming our judgments aright, we shall be led into frequent mistakes, both in matters of *science*, and in matters of *practice*; and some of these mistakes may prove fatal too.

The *art of logic*, even as it assists us to gain the knowledge of the sciences, leads us on toward virtue and happiness; for all our *speculative acquaintance with things* should be made subservient to our better *conduct in the civil and religious life*. This is infinitely more valuable than all speculations; and a wise man will use them chiefly for this better purpose.

All the good judgment and prudence that any man exerts in his common concerns of life, without the advantage of learning, is called *natural logic*: And it is but a higher advancement, and a farther assistance of our rational powers, that is designed by, and expected from, this *artificial logic*.

In order to attain this, we must inquire what are the *principal operations of the mind*, which are put forth in the exercise of our reason? and we shall find them to be these four, namely, *perception, judgment, argumentation*, and *disposition*.

Now,

Now, the *Art of Logic* is compoſed of thoſe obſervations and rules which men have made about theſe four operations of the mind, *perception*, *judgment*, *reaſoning*, and *diſpoſition*, in order to aſſiſt and improve them.

I. *Perception*, *conception*, or *apprehenſion*, is the mere ſimple contemplation of things offered to our minds, without affirming or denying any thing concerning them. So we conceive or think of *a horſe*, *a tree*, *high*, *ſwift*, *ſlow*, *animal*, *time*, *motion*, *matter*, *mind*, *life*, *death*, &c. The *form* under which theſe things appear to the mind, or the reſult of our conception or apprehenſion, is called an *idea*.

II. *Judgment* is that operation of the mind whereby we join two or more ideas together by one affirmation or negation; that is, we either affirm or deny *this* to be *that*. So *This tree is high*; *That horſe is not ſwift*; *The mind of man is a thinking being*; *Mere matter has no thought belonging to it*; *God is juſt*; *Good men are often miſerable in this world*; *A righteous governor will make a difference betwixt the evil and the good*; which ſentences are the effect of judgment, and are called *propoſitions*.

III. *Argumentation* or *reaſoning* is that operation of the mind, whereby we infer one thing, that is, one propoſition from two or more propoſitions premiſed. Or, it is the drawing a concluſion, which before was either unknown, or dark, or doubtful, from ſome propoſitions which are more known and evident. So, when we have judged that *matter cannot think*, and that the *mind of man doth think*, we then infer and conclude, that *therefore the mind of man is not matter*.

So we judge, that *a juſt governor will make a difference between the evil and the good*; we judge alſo, that God is *a juſt governor*; and from thence we conclude, that *God will make a difference between the evil and the good*.

This argumentation may be carried on farther: Thus, *God will one time or another make a difference between the good and the evil*: But *there is little or no difference made in this world*: Therefore *there muſt be another world wherein this difference ſhall be made*.

Theſe *inferences* or *concluſions* are the effects of reaſoning; and the three propoſitions, taken all together, are all called a *ſyllogiſm* or *argument*.

IV.

IV. *Disposition* is that operation of the mind, whereby we put the ideas, propositions, and arguments, which we have formed concerning one subject, into such an order as is fittest to gain the clearest knowledge of it, to retain it longest, and to explain it to others in the best manner: Or, in short, it is the ranging of our thoughts in such order as is best for our own and others conception and memory. The effect of this operation is called *method*. This very *description of the four operations of the mind and their effects, in this order*, is an instance or example of method.

Now, as the art of logic assists our conceptions, so it gives us a *large* and *comprehensive* view of the subjects we inquire into, as well as a clear and distinct knowledge of them. As it regulates our *judgment* and our *reasoning*, so it secures us from mistakes, and gives us a *true* and *certain* knowledge of things; and, as it furnishes us with *method*, so it makes our knowledge of things both *easy* and *regular*, and guards our thoughts from confusion.

Logic is divided into four parts, according to these four operations of the mind, which it directs, and therefore we shall treat of it in this order.

LOGIC.

THE

FIRST PART

OF

LOGIC.

OF PERCEPTIONS AND IDEAS.

THE firſt part of *Logic* contains obſervations and precepts about the firſt operation of the mind, *perception* or *conception*: And, ſince all our knowledge, how wide and large ſoever it grow, is founded upon our conception and ideas, here we ſhall conſider,

1. *The general Nature of them.*
2. *The Objects of our Conception, or the Archetypes or Patterns of theſe Ideas.*
3. *The ſeveral Diviſions of them.*
4. *The Words and Terms whereby our Ideas are expreſſed.*
5. *General Directions about our Ideas.*
6. *Special Rules to direct our Conceptions.*

CHAP I.

Of the Nature of Ideas.

FIRST, the nature of conception or perception ſhall juſt be mentioned *, though this may ſeem to belong to another ſcience rather than *Logic*.

* *Note.* The words *conception* and *perception* are often uſed promiſcuouſly, as I have done here, becauſe I would not embarraſs a learner with too many diſtinctions; but, if I were to diſtinguiſh them, I would ſay, *perception* is the conſciouſneſs of an object when preſent; *conception* is the forming an idea of the object, whether preſent or abſent.

Perception is that act of the mind, (or, as ſome philoſophers call it), rather a *paſſion* or *impreſſion*, whereby the mind becomes conſcious of any thing; as, when I feel hunger, thirſt, or cold, or heat; when I ſee a horſe, a tree, or a man; when I hear a human voice, or thunder, I am conſcious of theſe things, and this is called *perception*. If I ſtudy, meditate, wiſh, or fear, I am conſcious of theſe inward acts alſo, and my mind perceives its own *thoughts*, *wiſhes*, *fears*, &c.

An *idea* is generally defined a *repreſentation* of *a thing in the mind*; it is a repreſentation of ſomething that we have *ſeen*, *felt*, *heard*, &c. or *been conſcious of*. That notion, or form of a horſe, a tree, or a man, which is in the mind, is called the *idea* of a horſe, a tree, or a man.

That notion of hunger, cold, ſound, colour, thought, or wiſh, or fear, which is in the mind, is called the *idea* of hunger, cold, ſound, wiſh, &c.

It is not the outward object, or thing which is *perceived*, namely, the horſe, the man, &c. nor is it the very *perception* or *ſenſe*, and *feeling*, namely, of hunger, or cold, &c. which is called the *idea*; but it is the *thing as it exiſts in the mind* by way of conception or repreſentation, that is properly called the *idea*, whether the object be preſent or abſent.

As a horſe, a man, a tree, are the outward objects of our perception, and the outward *archetypes* or *patterns* of our *ideas*; ſo our own ſenſations of hunger, cold, &c. are alſo inward *archetypes* or *patterns* of our *ideas*: But the *notions* or *pictures* of theſe things, as they are conſidered, or conceived in the mind, are preciſely the *ideas* that we have to do with in *Logic*. To *ſee* a horſe, or to *feel* cold, is one thing; to *think* of, and *converſe* about a man, a horſe, hunger, or cold, is another.

Among all theſe *ideas*, ſuch as repreſent *bodies* are generally called *images*, eſpecially if the idea of the ſhape be included. Thoſe inward repreſentations which we have of *ſpirit*, *thought*, *love*, *hatred*, *cauſe*, *effect*, &c. are more *pure* and *mental ideas*, belonging more eſpecially to the mind, and carry nothing of ſhape or ſenſe in them. But I ſhall have occaſion to ſpeak more particularly of the original and the diſtinction of *ideas* in the third chapter. I proceed therefore now to conſider the objects of our *ideas*.

CHAP.

CHAP II.

Of the Objects of Perception.

SECT. I.

Of Being in general.

THE object of *perception* is that which is represented in the idea, that which is the *archetype* or *pattern*, according to which the idea is formed; and thus *judgments*, *propositions*, *reasons*, and *long discourses*, may all become the objects of perception; but in this place we speak chiefly of the *first* and most *simple* objects of it, before they are joined and formed into propositions or discourses.

Every object of our idea is called a *theme*, whether it be a *being* or *not-being*; for *not-being* may be proposed to our thoughts, as well as that which has a real being. But, let us first treat of *beings*, and that in the largest extent of the word.

A *being* is considered as *possible*, or as *actual*.

When it is considered as *possible*, it is said to have an *essence* or *nature*; such were *all things before their creation*: When it is considered as *actual*, then it is said to have *existence* also; such are *all things which are created*, and God himself the Creator.

Essence, therefore, is but the very nature of any being, whether it be actually existing or no. A rose in winter has an *essence*, in summer it has *existence* also.

Note. There is but one Being which includes *existence* in the very essence of it, and that is God, who therefore actually *exists* by natural and eternal necessity; but the actual existence of every creature is very distinct from its *essence*, for it may *be*, or may *not be*, as God pleases.

Again, Every *being* is considered either as subsisting in and by itself, and then it is called a *substance*; or it subsists in and by another, and then it is called a *mode* or *manner* of being; though few writers allow *mode* to be called a being in the same perfect sense as a *substance* is; and some

modes

modes have evidently more of real *entity* or *being* than others, as will appear when we come to treat of them. These things will furnish us with matter for large discourse in the following sections.

SECT. II.

Of SUBSTANCES, *and their various Kinds.*

A *Substance* is a being which can subsist by itself, without dependence upon any other created being. The notion of *subsisting by itself* gives occasion to logicians to call it a *substance*. So a horse, a house, wood, stone, water, fire, a spirit, a body, an angel, are called *substances*, because they depend on nothing but God for their existence.

It has been usual also, in the description of *substance*, to add, it is that which is the subject of *modes* or *accidents*; a *body* is the substance or subject, its *shape* is the mode.

But, lest we be led into mistakes, let us here take notice, that, when a substance is said to *subsist without dependence upon another created being*; all that we mean is, that it cannot be annihilated, or utterly destroyed and reduced to nothing, by any power inferior to that of our Creator; though its present particular form, nature, and properties, may be altered and destroyed by many inferior causes: A horse may die, and turn to dust; wood may be turned into fire, smoke, and ashes; a house into rubbish, and water into ice or vapour; but the substance or matter of which they are made still remains, though the forms and shapes of it are altered. A body may cease to be a house or a horse, but it is a body still; and in this sense it depends only upon God for its existence.

Among *substances*, some are *thinking* or conscious beings, or have a power of thought, such as the *mind* of man, *God*, *angels*. Some are *extended* and *solid*, or *impenetrable*, that is, they have dimensions of length, breadth, and depth, and have also a power of resistance, or to exclude every thing of the same kind from being in the same place. This is the proper character of *matter* or *body*.

As

As for the idea of *Space*, whether it be *void* or *full*, that is, a *vacuum* or a *plenum*, whether it be interspersed among all bodies, or may be supposed to reach beyond the bounds of the creation, it is an argument too long and too hard to be disputed in this place what the nature of it is: It has been much debated whether it be a real substance, or a mere conception of the mind; whether it be the immensity of the divine nature, or the mere order of co-existent beings; whether it be the manner of our conception of the distances of bodies, or a mere nothing. Therefore I drop the mention of it here, and refer the reader to the *first essay* among the *Philosophical Essays*, by *I. W.* published 1733.

Now if we seclude Space out of our consideration, there will remain but two sorts of substances in the world, that is, *Matter* and *Mind*, or, as we otherwise call them, *Body* and *Spirit*; at least we have no ideas of any other substance but these.*

Among substances, some are called *simple*, some are *compound*, whether the words be taken in a *philosophical* or a *vulgar* sense.

*Because men have different ideas and notions of *Substance*, I thought it not proper intirely to omit all accounts of them, and therefore have thrown them into the margin.

Some philosophers suppose that our acquaintance with *matter* or *mind* reaches no farther than the mere properties of them, and that there is a sort of unknown being, which is the *substance* or the *subject* by which these properties of *solid extension* and of *cogitation* are supported, and in which these properties inhere or exist. But perhaps this notion arises only from our turning the mere abstracted or *logical* notion of *substance* or *self-subsisting* into the notion of a distinct *physical* or natural being, without any necessity. Solid extension seems, to me, to be the very substance of *matter*, or of all bodies; and a *power of thinking*, *which is always in act*, seems to be the very substance of all *spirits*; for *God* himself is an intelligent almighty power; nor is there any need to seek for any other secret and unknown being, or *abstracted substance*, intirely distinct from these, in order to support the several modes or properties of matter or mind, for these two ideas are sufficient for that purpose; therefore I rather think these are *substances*.

It must be confessed, when we say, *Spirit is a thinking substance*, and *Matter is an extended solid substance*, we are sometimes ready to imagine that extension and solidy are but mere modes and properties of a certain unknown substance or subject which supports them, and which we call *body*; and that a

Simple substances, in a *philosophical sense*, are either *spirits*, which have no manner of composition in them, and in this sense GOD is called a *simple being*; or they are the first principles of bodies, which are usually called *elements*, of which

power of thinking is but a mere mode and property of some unknown substance or subject which supports it, and which we call *spirit*: But I rather take this to be a mere mistake, which we are led into by the grammatical form and use of words; and perhaps our logical way of thinking by *substances* and *modes*, as well as our grammatical way of talking by *substantives* and *adjectives*, help to delude us into the supposition.

However, that I may not be wanting to any of my readers, I would let them know Mr. *Locke's* opinion, which has obtained much in the present age; and it is this: "That our idea "of any particular substance is only such a combination of "simple ideas as represent that thing as subsisting by itself, in "which the supposed or confused idea of substance (such as it "is) is always ready to offer itself. It is a conjunction of ideas "co-existing in such a cause of their union, and makes the "whole subject subsist by itself, though the cause of their union "be unknown; and our general idea of substance arises from "the self-subsistence of this collection of ideas."

Now, if this notion of substance rest here, and be considered merely as an unknown cause of the union of properties, it is much more easy to be admitted; but, if we proceed to suppose a sort of real, substantial, distinct being, different from solid *quantity* or *extension* in bodies, and different from a *power of thinking* in spirits, in my opinion it is the introduction of a needless scholastical notion into the real nature of things, and then fancying it to have a real existence.

Mr. *Locke*, in his *Essay of Human Understanding*, Book II. chap. 22. §. 2. seems to ridicule this common idea of *substance*, which men have generally supposed to be a sort of *substratum*, distinct from all properties whatsoever, and to be the support of all properties. Yet, in Book IV. chap. 3. § 6. he seems to suppose there may be such an unknown *substratum*, which may be capable of receiving the properties both of *matter* and of *mind*, namely, *extension*, *solidity*, and *cogitation*; for he supposes it possible for *God* to add *cogitation* to that *substance* which is *corporeal*, and thus to cause *matter to think*. If this be true, then spirits (for aught we know) may be *corporeal beings*, or *thinking bodies*, which is a doctrine too favourable to the *mortality of the soul*. But I leave these debates to the philosophers of the age, and will not be too positive in my opinion of this abstruse subject.

See more of this argument in *Philosophical Essays*, before cited, *Essay* 2d.

which all other bodies are compounded: *Elements* are such substances as cannot be resolved, or reduced, into two or more substances of different kinds.

The various sects of philosophers have attributed the honour of this name to various things. The Peripatetic, or followers of *Aristotle*, made *Fire*, *Air*, *Earth*, and *Water*, to be the four elements of which all earthly things were compounded; and they supposed the heavens to be a *quintessence*, or *fifth* sort of body, distinct from all these: But, since experimental philosophy and mathematics have been better understood, this doctrine has been abundantly refuted. The *Chemists* make *Spirit*, *Salt*, *Sulpher*, *Water*, and *Earth*, to be their *five* elements, because they can reduce all terrestrial things to these five: This seems to come nearer the truth; though they are not all agreed in this enumeration of elements. In short, our modern philosophers generally suppose *matter* or *body* to be one simple principle, or *solid extension*, which being diversified by its various shapes, quantities, motions, and situations, makes all the varieties that are found in the universe; and therefore they make little use of the word *element*.

Compound substances are made up of two or more *simple* substances: So every thing in this whole material creation, that can be reduced by the art of man into two or more different principles or substances, is a *compound body* in the philosophical sense.

But, if we take the words *simple* and *compound* in a vulgar sense, then all those are simple substances which are generally esteemed uniform in their nature. So every herb is called a *simple*, and every metal a *mineral*; though the chemist perhaps may find all his several elements in each of them. So a needle is a *simple* body, being only made of steel; but a sword or a knife is a *compound*, because its haft or handle is made of materials different from the blade. So the *Bark of Peru*, or the *Juice* of *Sorrel*, is a *simple* medicine: But, when the apothecary's art has mingled several simples together, it becomes a *compound*, as *Diascordium*, or *Mithridate*.

The terms of *pure* and *mixt*, when applied to bodies, are much akin to *simple* and *compound*. So a guinea is *pure* gold, if it has nothing but gold in it, without any alloy of baser

baſer metal: But, if any other mineral or metal be mingled with it, it is called a *mixt* ſubſtance or body.

Subſtances are alſo divided into *animate* and *inanimate*. Animated ſubſtances are either *animal* or *vegetable*.*

Some of the *animal ſubſtances* have various organical or inſtrumental parts, fitted for a variety of motions from place to place, and a ſpring of life within themſelves, as beaſts, birds, fiſhes, and inſects; theſe are called *animals*. Other *animated ſubſtances* are called *vegetables*, which have within themſelves the principles of another ſort of life and growth, and of various productions of leaves, flowers, and fruit, ſuch as we ſee in plants, herbs, and trees.

And there are other ſubſtances, which are called *inanimate*, becauſe they have no ſort of life in them, as earth, ſtone, air, water, &c.

There is alſo one ſort of ſubſtance or being, which is *compounded* of *body* and *mind*, or a rational ſpirit united to an animal; ſuch is mankind. *Angels*, or any other beings of the ſpiritual and inviſible world, who have aſſumed viſible ſhapes for a ſeaſon, can hardly be reckoned among this order of compounded beings; becauſe they drop their bodies, and diveſt themſelves of thoſe viſible ſhapes, when their particular meſſage is performed, and thereby ſhew that theſe bodies do not belong to their natures.

SECT. III.

Of Modes, *and their various kinds, and firſt of eſſential and accidental Modes.*

THE next ſort of objects which are repreſented in our ideas, are called *modes* or *manners of being*.†

A

* *Note, Vegetables*, as well as *animals* have gotten the name of *animated* ſubſtances, becauſe ſome of the ancients ſuppoſed herbs and plants, beaſts and birds, &c. to have a ſort of *ſoul*, diſtinct from matter, or *body*.

† *Note*, The term *mode* is by ſome authors applied chiefly to the *relations*, or relative manners of being. But, in logical treatiſes, it is often uſed in a larger ſenſe, and extends to all *attributes* whatſoever, and includes the moſt eſſential and inward properties, as well as outward reſpects and relations, and reaches to *actions* themſelves, as well as *manners* of action.

A *mode* is that which cannot subsist in and of itself, but is always esteemed as belonging to, and subsisting by the help of some *substance*, which for that reason is called its *subject*. A mode must depend on that substance for its very existence and being; and that not as a being depends on its *cause*, (for so *substances* themselves depend on GOD their Creator); but the *very being of a mode* depends on some substance for its *subject*, in which it is, or to which it belongs; so motion, shape, quantity, weight, are *modes* of the *body*; knowledge, wit, folly, love, doubting, judging, are *modes* of the *mind*; for the one cannot subsist without *body*, and the other cannot subsist without *mind*.

Modes have their several divisions, as well as substances.

I. Modes are either *essential* or *accidental*.

An *essential mode* or *attribute*, is that which belongs to the very nature or essence of the subject wherein it is; and the subject can never have the same nature without it; such is *roundness* in a bowl, *hardness* in a stone, *softness* in water, *vital motion* in an animal, *solidity* in matter, *thinking* in a spirit; for, though that piece of wood which is now a bowl may be made *square*, yet, if *roundness* be taken away, it is no longer a bowl: So that very flesh and bones, which is now an *animal*, may be without *life* or inward motion; but, if all motion be entirely gone, it is no longer an animal, but a carcass: So, if a *body* or matter be divested of *solidity*, it is a mere void space, or nothing; and, if *spirit* be entirely without *thinking*, I have no idea of any thing that is left in it; therefore, so far as I am able to judge, *consciousness* must be its essential attribute*. Thus, all the perfections of GOD are called his *attributes*, for he cannot be without them.

An *essential mode* is either *primary* or *secondary*.

A *primary essential mode* is the first or chief thing that constitutes any being in its particular essence or nature, and makes

* *Note*, When I call solid extension an essential *mode* or attribute of *matter*, and a power of thinking an essential *mode* or attribute of a *spirit*, I do it in compliance with common forms of speech: But perhaps in reality these are the very *essences* or *substances* themselves, and the most substantial ideas that we can form of *body* and *spirit*, and have no need of any (we know not what) *substratum*, or unintelligible substance, to support them in their existence or being.

makes it to be that which it is, and diſtinguiſhes it from all other beings: This is called the *difference* in the definition of things; of which hereafter: So *roundneſs* is the primary eſſential mode or difference of a bowl; the *meeting of two lines* is the primary eſſential mode, or the difference of an *angle*; the *perpendicularity* of theſe lines to each other is the difference of a *right angle*: *Solid extenſion* is the primary attribute or difference of *matter*: *Conſciouſneſs*, or at leaſt a *power of thinking*, is the difference or primary attribute of a *ſpirit** ; and to *fear* and *love* GOD is the primary attribute of a *pious man*.

A *ſecondary eſſential mode* is any other attribute of a thing which is not of primary conſideration: This is called a *property*: Sometimes indeed it goes towards making up the eſſence, eſpecially of a *complex being*, ſo far as we are acquainted with it; ſometimes it depends upon, and follows from the eſſence of it; ſo, *volubility*, or *aptneſs* to roll, is the property of a bowl, and is derived from its *roundneſs*. *Mobility*, and *figure*, or *ſhape*, are properties of *matter*; and it is the property of a *pious man* to *love his neighbour*.

An *accidental mode*, or an *accident*, is ſuch a mode as is not *neceſſary* to the being of a thing, for the ſubject may be without it, and yet remain of the ſame nature that it was before, or it is that mode which may be ſeparated or aboliſhed from its ſubject: So, *ſmoothneſs* or *roughneſs*, *blackneſs* or *whiteneſs*, *motion* or *reſt*, are the accidents of a bowl; for theſe may be all changed, and yet the body remain a bowl ſtill: *Learning*, *juſtice*, *folly*, *ſickneſs*, *health*, are the accidents of a *man*: *Motion*, *ſquareneſs*, or any *particular ſhape* or *ſize*, are the accidents of *body*: Yet, *ſhape* and *ſize*, in general, are eſſential modes of it; for a body muſt have ſome ſize and ſhape; nor can it be without them: So, *hope*, *fear*, *wiſhing*, *aſſenting*, and *doubting*, are accidents of the *mind*, though *thinking* in general ſeems to be *eſſential* to it.

Here obſerve, that the name of *accident* has been oftentimes given by the old Peripatetic philoſophers to all modes, whether eſſential or accidental; but the moderns confine this word *accident* to the ſenſe in which I have deſcribed it.

Here

* See preceding Note.

Here it should be noted also, that, though the word *property* be limited sometimes, in logical treatises, to the *secondary essential mode*, yet it is used in common language to signify these four sorts of *modes*; of which some are *essential*, and some *accidental*.

1. Such as belong to *every* subject of that kind, but *not only* to those subjects. So, *yellow colour*, and *ductility*, are properties of gold; they belong to *all* gold, but not *only* to gold; for saffron is also *yellow*, and lead is *ductile*.

2. Such as belong only to *one* kind of subject, but not to *every* subject of that kind. So, *learning*, *reading*, and *writing*, are properties of *human nature*; they belong only to man, but *not* to *all* men.

3. Such as belong to *every* subject of one kind, and *only* to them, but *not always*. So, *speech* or *language* is a property of *man*, for it belongs to *all* men, and to men *only*; but men are *not always* speaking.

4. Such as belong to *every* subject of one kind, and to them *only* and *always*. So, *shape* and *divisibility* are properties of *body*; so *omniscience* and *omnipotence* are properties of *divine Nature*; for in this sense properties and attributes are the same; and, except in logical treatises, there is scarce any distinction made between them. These are called *propria quarto modo* in the schools, or *properties of the fourth sort*.

Note, Where there is any one *property* or *essential attribute* so superior to the rest, that it appears plainly that all the rest are derived from it, and such as is sufficient to give a full distinction of that subject from all other subjects, this attribute or property is called the *essential difference*, as is before declared; and we commonly say, the *essence* of the thing consists in it; so the *essence of matter* in general seems to consist in *solidity*, or *solid extension*. But, for the most part, we are so much at a loss in finding out the intimate essence of particular natural bodies, that we are forced to distinguish the *essential difference* of most things by a *combination* of properties. So a *sparrow* is a bird which has such coloured feathers, and such a particular size, shape and motion. So *wormwood* is an herb which has such a leaf of such a colour, and shape, and taste, and such a root and stalk. So beasts and fishes, minerals, metals, and

works

works of art sometimes, as well as of nature, are distinguished by such a *collection of properties*.

SECT. IV.

The farther divisions of Mode.

THE *second* division of Modes is into *absolute and relative*. An *absolute mode* is that which belongs to its subject, without respect to any other beings whatsoever: But a *relative mode* is derived from the regard that one being has to others. So *roundness* and *smoothness* are the *absolute* modes of a bowl; for, if there were nothing else existing in the whole creation, a bowl might be *round* and *smooth*: But *greatness* and *smallness* are relative modes; for the very ideas of them are derived merely from the comparison of one being with others: A bowl of four inches diameter is *very great* compared with one of an inch and a half; but it is *very small* in comparison of another bowl whose diameter is eighteen or twenty inches. *Motion* is the absolute mode of a body, but *swiftness* or *slowness* are relative ideas; for the motion of a bowl on a bowling-green is *swift* when compared with a snail; and it is *slow* when compared with a cannon-bullet.

These *relative modes* are largely treated of by some logical and metaphysical writers, under the name of *relations*: And these relations themselves are farther subdivided into *such as arise from the nature of things*, and *such as arise merely from the operation of our minds*; one sort are called *real relations*, the other *mental*; so the *likeness* of one egg to another is a *real* relation, because it arises from the real nature of things; for, whether there was any man or mind to conceive it or no, one egg would be like another: But, when we consider an egg as a *noun substantive* in grammar, or as signified by the letters *e g g*, these are *mere mental* relations, and derive their very nature from the mind of man. These sort of relations are called by the schools *entia rationis*, or *second notions*, which have no real being, but depend entirely on the operation of the mind.

III. The *third* division of modes shew us they are either

ther *intrinsical*, or *extrinsical*. *Intrinsical modes* are conceived to be in the subject or substance, as when we say a globe is *round*, or *swift*, *rolling*, or at *rest*: Or, when we say a man is *tall*, or *learned*, these are *intrinsic modes*: But, *extrinsic modes* are such as arise from something that is not in the subject or substance itself; but it is a manner of being which some substances attain by reason of something that is external or foreign to the subject; as, *this globe lies within two yards of the wall*; or, *This man is beloved*, or *hated*. *Note.* Such sort of modes as this last example are called *external denominations*.

IV. There is a *fourth* division much akin to this, whereby modes are said to be *inherent* or *adherent*, that is, *proper* or *improper*. *Adherent* or *improper modes* arise from the joining of some accidental substance to the chief subject, which yet may be separated from it; so when a *bowl is wet*, or a *boy is clothed*, these are *adherent modes*; for the water and the clothes are distinct substances, which adhere to the *bowl*, or to the *boy*: But, when we say the *bowl is swift* or *round*, when we say the *boy is strong* or *witty*, these are proper or *inherent modes*, for they have a sort of *in-being* in the substance itself, and do not arise from the addition of any other substance to it.

V. *Action* and *passion* are modes or manners which belong to substances, and should not entirely be omitted here. When a *smith* with a *hammer* strikes a piece of *iron*, the *hammer* and the *smith* are both *agents* or subjects of action; the one is the *prime* or *supreme*, the other the *subordinate*: The iron is the *patient*, or the subject of passion, in a philosophical sense, because it receives the operation of the agent; though this sense of the words *passion* and *patient* differs much from the vulgar meaning of them.*

VI. The *sixth* division of modes may be into *physical*, that is, *natural*, *civil*, *moral*, and *supernatural*. So when we consider the apostle *Paul*, who was a little man, a Roman by the privilege of his birth, a man of virtue or honesty, and an inspired apostle; his *low stature* is a *physical* mode,

* *Note.* *Agent* signifies the *doer*, *patient* the *sufferer*, *action* is *doing*, *passion* is *suffering*: Agent and action have retained their original philosophical sense, though patient and passion have acquired a very different meaning in common language.

his being a *Roman* is a *civil* privilege, his *honesty* is a *moral* consideration, and his being *inspired* is *supernatural*.

VII. Modes belong either to *body* or to *spirit*, or to *both*. *Modes of body* belong only to matter or to corporeal beings; and these are *shape*, *size*, *situation* or *place*, &c. *Modes of spirit* belong only to minds; such are *knowledge*, *assent*, *dissent*, *doubting*, *reasoning*, &c. Modes which belong to both have been sometimes called *mixed modes*, or *human modes*, for these are only found in human nature, which is compounded both of body and spirit; such are *sensation*, *imagination*, *passion*, &c. in all which there is a concurrence of the operations both of mind and body, that is of animal and intellectual nature.

But the *modes of body* may be yet farther distinguished. Some of them are *primary modes* or *qualities*, for they belong to bodies considered in themselves, whether there were any man to take notice of them or no; such are those before-mentioned, namely, *shape*, *size*, *situation*, &c. *Secondary qualities*, or *modes*, are such ideas as we ascribe to bodies on account of the various impressions which are made on the senses of men by them; and these are called *sensible qualities*, which are very numerous; such are all *colours*, as *red*, *green*, *blue*, &c. such are all *sounds*, as *sharp*, *shrill*, *loud*, *hoarse*; all *tastes*, as *sweet*, *bitter*, *sour*; all *smells*, whether *pleasant*, *offensive*, or *indifferent*; and all *tactile qualities*, or such as affect the *touch* or *feeling*, namely, *heat*, *cold*, &c. These are properly called *secondary qualities*; for, though we are ready to conceive them as existing in the very bodies themselves which affect our senses, yet true philosophy has most undeniably proved, that all these are really various ideas or perceptions excited in human nature by the different impressions that bodies make upon our senses by their *primary modes*, that is, by means of the different shape, size, motion, and position, of those little invisible parts that compose them. Thence it follows that a *secondary quality*, considered as in the bodies themselves, is nothing else but a power or aptitude to produce such sensations in us: See *Locke's Essay on the Understanding*, Book II. Chap. 8.

VIII. I might add, in the last place, that, as *modes* belong to *substances*, so there are some also that are but *modes* of

of other modes: For, though they subsist in and by the *substance*, as the original subject of them, yet they are properly and directly attributed to some mode of that substance. *Motion* is the mode of a body; but the *swiftness* or *slowness* of it, or its *direction to the north or south*, are but modes of motion. *Walking* is the mode or manner of a man, or of a beast; but *walking gracefully* implies a manner or mode superadded to that action. All comparative and superlative degrees, of any quality, are the *modes of a mode*, as *swifter* implies a greater *measure of swiftness*.

It would be too tedious here to run through all the *modes*, *accidents*, and *relations*, at large, that belong to various beings, and are copiously treated of in *general*, in the science called *Metaphysics*, or, more properly *Ontology*: They are also treated of, in *particular*, in those sciences which have assumed them severally as their proper subjects.

SECT. V.

Of the ten Categories. Of Substance modified.

WE have thus given an account of the two chief objects of our ideas, namely, *substances* and *modes*, and their various kinds; and in these last sections we have briefly comprised the greatest part of what is necessary in the famous ten ranks of being, called the ten *predicaments* or *categories* of *Aristotle*, on which there are endless volumes of discourses formed by several of his followers. But that the reader may not utterly be ignorant of them, let him know the names are these: *Substance*, *quantity*, *quality*, *relation*, *action*, *passion*, *where*, *when*, *situation*, and *cloathing*. It would be mere loss of time to shew how loose, how injudicious, and even ridiculous, this tensold division of things is: And whatsoever farther relates to them, and which may tend to improve useful knowledge, should be sought in *Ontology*, and in other sciences.

Besides *substance* and *mode*, some of the moderns would have us consider the *substance modified* as a distinct object of our ideas; but I think there is nothing more that need be said on this subject, than this, namely, There is some difference between a substance, when it is considered *with all its*

its modes about it, or clothed in all its manners of existence, and when it is distinguished from them, and considered naked *without them.*

SECT. IV.

Of Not-Being.

AS *being* is divided into *substance* and *mode*, so we may consider *not-being* with regard to both these.

I. *Not-being* is considered as excluding all substance, and then all modes are also necessarily excluded; and this we call *pure nihility*, or *mere nothing*.

This *nothing* is taken either in a *vulgar* or a *philosophical* sense; so we say, *There is nothing in the cup* in a vulgar sense, when we mean there is no *liquor in it;* but we cannot say, *There is nothing in the cup*, in a strict philosophical sense, where there is *air* in it, and perhaps a million of *rays of light* are there.

II. *Not being*, as it has relation to *modes* or manners of *being*, may be considered either as a mere *negation*, or as a *privation*.

A *negation* is the absence of that which does not naturally belong to the thing we are speaking of, or which has no right, obligation, or necessity, to be present with it; as, when we say, *a stone is inanimate*, or *blind*, or *deaf;* that is, it has no *life*, nor *sight*, nor *hearing;* nor when we say, a *carpenter* or a *fisherman* is *unlearned*, these are mere *negations*.

But a *privation* is the absence of what does naturally belong to the thing we are speaking of, or which ought to be present with it; as when a *man* or a *horse* is *deaf*, or *blind*, or *dead;* or if a *physician* or a *divine* be unlearned, these are called *privations*: So the *sinfulness* of any human action is said to be a *privation;* for *sin* is that want of conformity to the law of God which ought to be found in every action of man.

Note, There are some writers who make all sorts of *relative modes* or *relations*, as well as all external denominations, to be mere creatures of the mind, and *entia rationis*, and then they rank them also under the general head

head of *not-beings*; but it is my opinion, that whatsoever may be determined concerning mere mental relations and external denominations, which seem to have something less of entity or being in them, yet there are many *real relations*, which ought not to be reduced to so low a class; such are the *situation* of bodies, their mutual *distances*, their particular *proportions* and *measures*, the notions of *fatherhood*, *brotherhood*, *sonship*, &c. all which are relative ideas. The very essence of *virtues* or *holiness* consists in the conformity of our actions to the rule of right reason, or the law of God: The nature and essence of *sincerity*, is the conformity of our words and actions to our thoughts, all which are but *mere relations*; and I think we must not reduce such positive beings as *piety*, and *virtue*, and *truth*, to the rank of non-entities, which have nothing real in them, though *sin*, (or rather the sinfulness of an action), may be properly called a not-being: for it is a want of piety and virtue. This is the most usual, and perhaps the justest way of representing these matters.

CHAP. III.

Of the several Sorts of Perceptions or Ideas.

IDEAS may be divided with regard to their *original*, their *nature*, their *objects*, and their *qualities*.

SECT. I.

Of Sensible, Spiritual, and abstracted Ideas.

THERE has been a great controversy about the *origin* of ideas, namely, whether any of our ideas are *innate* or no, that is, born with us, and naturally belonging to our minds. Mr. Locke utterly denies it; others as positively affirm it. Now, though this controversy may be compromised, by allowing that there is a sense wherein our first ideas of some things may be said to be innate,

(as I have shewn in some remarks on Mr. Locke's Essay, which have lain long by me), yet it does not belong to this place and business to have that point debated at large, nor will it hinder our pursuit of the present work to pass over it in silence.

There is sufficient ground to say, that all our ideas, with regard to their original, may be divided into three sorts, namely, *sensible*, *spiritual*, and *abstracted* ideas.

I. *Sensible* or *corporeal ideas*, are derived originally from our senses, and from the communication which the soul has with the animal body in this present state; such are the notions we frame of all *colours*, *sounds*, *tastes*, *figures*, or *shapes* and *motions*; for our senses being conversant about particular sensible objects, become the occasions of several distinct perceptions in the mind; and thus we come by the ideas of *yellow*, *white*, *heat*, *cold*, *soft*, *hard*, *bitter*, *sweet*, and all those which we call *sensible* qualities. All the ideas which we have of *body*, and the sensible modes and properties that belong to it, seem to be derived from *sensation*.

And however these may be treasured up in the memory, and by the work of fancy may be increased, diminished, compounded, divided, and diversified, (which we are ready to call *our invention*), yet they all derive their first nature and being from something that has been let into our minds by one or other of our senses. If I think of a *golden mountain*, or a *sea of liquid fire*, yet the single ideas of *sea*, *fire*, *mountain*, and *gold*, came into my thoughts at first by sensation; the mind has only compounded them.

II. *Spiritual** or *intellectual ideas*, are those which we gain by reflecting on the nature and actions of our own souls, and turning our thoughts within ourselves, and observing what is transacted in our own minds. Such are the ideas we have of *thought*, *assent*, *dissent*, *judging*, *reason*, *knowledge*, *understanding*, *will*, *love*, *fear*, *hope*.

By *sensation* the soul contemplates things (as it were) out of itself, and gains corporeal representations or sensible ideas: By *reflection*, the soul contemplates itself, and things

* Here the word *spiritual* is used in a mere natural, and not in a religious sense.

things within itself, and by this means it gains spiritual ideas, or representations of things intellectual.

Here it may be noted, though the first original of these two sorts of ideas, namely, *sensible* and *spiritual*, may be intirely owing to these two principles, sensation, and reflection, yet the *recollection*, and fresh excitation of them, may be owing to a thousand other occasions and occurrences of life. We could never inform a man who was born blind or deaf what we mean by the words *yellow*, *blue*, *red*, or by the words *loud* or *shrill*, nor convey any just ideas of these things to his mind, by all the powers of language, unless he has experienced those sensations of sound and colour; nor could we ever gain the ideas of *thought*, *judgment*, *reason*, *doubting*, *hoping*, &c. by all the words that man could invent, without turning our thoughts inward upon the actions of our own souls. Yet, when once we have attained these ideas, by sensation and reflection, they may be excited afresh by the use of names, words, signs, or by any thing else that has been connected with them in our thoughts; for, when two or more ideas have been associated together, whether it be by custom, or accident, or design, the one presently brings the other to mind.

III. Besides these two which we have named, there is a *third* sort of ideas, which are commonly called *abstracted ideas*, because, though the original ground or occasion of them may be sensation, or reflection, or both, yet these ideas are framed by another act of the mind, which we usually call *abstraction*. Now, the word abstraction signifies *a withdrawing some parts of an idea from other parts of it*; by which means such abstracted ideas are formed, as neither represent any thing corporeal or spiritual, that is, any thing peculiar or proper to mind or body. Now these are of two kinds.

Some of these abstracted ideas are the most *absolute*, general and universal conceptions of things, considered in themselves, without respect to others; such as *entity* or *being*, and *not-being*, *essence*, *existence*, *act*, *power*, *substance*, *mode*, *accident*, &c.

The other sort of abstracted ideas is *relative*, as when we compare several things together, and consider merely the

the relations of one thing to another, entirely dropping the ſubject of thoſe relations, whether they be corporeal or ſpiritual; ſuch are our ideas of *cauſe*, *effect*, *likeneſs*, *unlikeneſs*, *ſubject*, *object*, *identity*, or *ſameneſs*, and *contrariety*, *order*, and other things which are treated of in *Ontology*.

Moſt of the terms of art, in ſeveral ſciences, may be ranked under this head of *abſtracted ideas*, as *noun*, *pronoun*, *verb*, in grammar, and the ſeveral particles of ſpeech, as *wherefore*, *therefore*, *when*, *how*, *although*, *howſoever*, &c. So *connections*, *tranſitions*, *ſimilitudes*, *tropes*, and their various forms in rhetoric.

Theſe abſtracted ideas, whether abſolute or relative, cannot ſo properly be ſaid to derive their immediate, complete, and diſtinct original, either from ſenſation, or reflection, (1.) Becauſe the nature and the actions, both of body and ſpirit, give us occaſion to frame exactly the ſame ideas of *eſſence*, *mode*, *cauſe*, *effect*, *likeneſs*, *contrariety*, &c. Therefore theſe cannot be called either *ſenſible* or *ſpiritual* ideas, for they are not exact repreſentations, either of the peculiar qualities or actions of ſpirit or body, but ſeem to be a diſtinct kind of idea framed in the mind, to repreſent our moſt general conceptions of things, or their relations to one another, without any regard to their natures, whether they be *corporeal* or *ſpiritual*. And, (2.) the ſame general ideas, of *cauſe* and *effect*, *likeneſs*, &c. may be transferred to a thouſand other kinds of being, whether bodily or ſpiritual, beſides thoſe from whence we firſt derived them: Even thoſe abſtracted ideas, which muſt be firſt occaſioned by *bodies*, may be as properly afterward attributed to *ſpirits*.

Now, though Mr. Locke ſuppoſes *ſenſation* and *reflection* to be the only two ſprings of all ideas, and that theſe two are ſufficient to furniſh our minds with all that rich variety of ideas which we have; yet *abſtraction* is certainly a different act of the mind, whence theſe abſtracted ideas have their original; though perhaps ſenſation or reflection may furniſh us with all the firſt objects and occaſions whence theſe abſtracted ideas are excited and derived. Nor in this ſenſe and view of things can I think Mr. Locke himſelf would deny my repreſentation of the original of abſtracted ideas, nor forbid them to ſtand for a diſtinct

ſpecies. *Note.*

Note. Though we have divided ideas in this chapter into three sorts, namely, *sensible*, *spiritual*, and *abstracted*, yet it may not be amiss just to take notice here, that a *man* may be called a *compound substance*, being made of body and mind, and the *modes* which arise from this composition are called *mixed modes*, such as *sensation*, *passion*, *discourse*, &c. so the *ideas* of this substance or being, called *man*, and of these mixed modes, may be called *mixed ideas*, for they are not properly and strictly *spiritual*, *sensible*, or *abstracted*. See a much larger account of every part of this chapter in the *Philosophical Essays*, by *I. Watts*, Essay III. IV. &c.

SECT. II.

Of simple and complex, compound and collective Ideas.

IDEAS considered in their nature, are either, *simple* or *complex*.

A *simple idea* is one uniform idea, which cannot be divided or distinguished by the mind of man into two or more ideas; such are a multitude of our sensations; as the idea of *sweet*, *bitter*, *cold*, *heat*, *white*, *red*, *blue*, *hard*, *soft*, *motion*, *rest*, and perhaps *extension* and *duration*: Such are also many of our spiritual ideas; such as *thought*, *will*, *wish*, *knowledge*, &c.

A *complex idea* is made by joining two or more simple ideas together; as a *square*, a *triangle*, a *cube*, a *pen*, a *table*, *reading*, *writing*, *truth*, *falsehood*, a *body*, a *man*, a *horse*, an *angel*, a *heavy body*, a *swift horse*, &c. Every thing that can be divided by the mind into two or more ideas is called *complex*.

Complex ideas are often considered as *single* and *distinct* beings, though they may be made up of several *simple ideas*; so a *body*, a *spirit*, a *house*, a *tree*, a *flower*. But, when several of these ideas of a *different kind* are joined together, which are wont to be considered as distinct single beings, this is called a *compound idea*, whether these united ideas be simple or complex. So, a man is compounded of *body* and *spirit*; so *mithridate* is a *compound medicine*, because it is made of many different ingredients: This I have shewn under the doctrine of *substances*. And *modes* also

may

may be compounded. *Harmony* is a compound idea made up of *different ſounds united*: So, ſeveral *different virtues* muſt be united to make up the compounded idea or character, either of a *hero*, or a *ſaint*.

But, when many ideas of the *ſame kind* are joined together, and united in one name, or under one view, it is called a *collective idea*; ſo, an *army* or a *parliament*, is a collection of men; a *dictionary* or *nomenclatura*, is a collection of words; a *flock* is a collection of ſheep; a *foreſt*, or *grove*, a collection of trees; an *heap*, is a collection of ſand, or corn, or duſt, &c. a *city*, is a collection of houſes; a *noſegay*, is a collection of flowers; a *month*, or *year*, is a collection of days; and a *thouſand*, is a collection of units.

The preciſe difference between a *compound* and *collective idea* is this, that a *compound idea* unites things of a different kind, but a *collective idea* things of the ſame kind: Though this diſtinction in ſome caſes is not accurately obſerved, and cuſtom oftentimes uſes the word *compound* for *collective*.

SECT. III.

Of univerſal and particular Ideas, *real and imaginary*.

IDEAS, according to their *objects*, may firſt be divided into *particular* or *univerſal*.

A *particular idea* is that which repreſents one thing only.

Sometimes the one thing is repreſented in a looſe and indeterminate manner, as, when we ſay, *ſome man*, *any man*, *one man*, *another man*; *ſome horſe*, *any horſe*; *one city*, or *another*; which is called by the ſchools *individuum vagum*.

Sometimes the *particular idea* repreſents one thing in a determinate manner, and then it is called a *ſingular idea*; ſuch is *Bucephalus*, or *Alexander's* horſe, *Cicero* the orator, *Peter* the apoſtle, the palace of *Verſailles*, *this book*, *that river*, the *New Foreſt*, or the city of *London*: That idea which repreſents one particular determinate thing to me, is called a *ſingular idea*, whether it be ſimple, or complex, or compound.

The *object* of any particular idea, as well as the *idea* itſelf, is ſometimes called an *individual*: So *Peter* is an individual man, *London* is an individual city. So, *this book*,

one

one horse, another horse, are all *individuals*; though the word *individual* is more usually limited to one *singular*, *certain*, and *determined* object.

An *universal idea*, is that which represents a common nature agreeing to several particular things; so a *horse*, a *man*, or a *book*, are called *universal ideas*; because they agree to all *horses*, *men*, or *books*.

And I think it not amiss to intimate, in this place, that these *universal ideas* are formed by that act of the mind which is called *abstraction*, that is, a withdrawing some part of an idea from other parts of it: For, when *singular ideas* are first let into the mind, by sensation or reflection, then, in order to make them *universal*, we leave out, or drop all those peculiar and determinate characters, qualities, modes, or circumstances, which belong merely to any particular individual being, and by which it differs from other beings; and we only contemplate those properties of it, wherein it agrees with other beings.

Though, it must be confessed, that the name of *abstracted ideas* is sometimes attributed to *universal ideas*, both *sensible* or *spiritual*, yet this abstraction is not so great, as when we drop out of our idea every *sensible* or *spiritual* representation, and retain nothing but the most *general* and *absolute* conceptions of things, or their mere *relations* to one another, without any regard to their particular natures, whether they be *sensible* or *spiritual*. And it is to this kind of conceptions we more properly give the name of *abstracted ideas*, as in the first section of this chapter.

An *universal idea* is either *general* or *spiritual*.

A *general idea* is called by the schools a *genus*; and it is one common nature agreeing to several other common natures. So *animal* is a *genus*; because it agrees to *horse*, *lion*, *whale*, *butterfly*, which are also common ideas; so *fish*, is a *genus*; because it agrees to *trout*, *herring*, *crab*, which are common natures also.

A *special idea* is called by the schools a *species*; it is one common nature that agrees to several singular individual beings; so *horse* is a *special idea*, or a *species*, because it agrees to *Bucephalus*, *Trott*, and *Snowball*. *City* is a *special idea*, for it agrees to *London*, *Paris*, *Bristol*.

Note

Note 1st. Some of these *universals* are *genuses*, if compared with less common natures; and they are *species*, if compared with natures more common. So *bird* is a *genus*, if compared with *eagle*, *sparrow*, *raven*, which are also common natures: But it is a *species*, if compared with the more general nature, *animal*. The same may be said of *fish*, *beast*, &c.

This sort of universal ideas, which may either be considered as a *genus*, or a *species*, is called *subaltern*: But the highest *genus*, which is never a *species*, is called the *most general*; and the lowest *species*, which is never a *genus*, is called the *most special*.

It may be observed here also, that that general nature or property, wherein one thing agrees with most other things, is called its *more remote genus*: So *substance* is the remote genus of *bird*, or *beast*, because it agrees not only to all kinds of animals, but also to things inanimate, as sun, stars, clouds, metals, stones, air, water, &c. But *animal* is the *proximate*, or *nearest genus of bird*, because it agrees to fewer other things. Those general natures which stand between the *nearest* and most *remote*, are called *intermediate*.

Note 2d. In universal ideas it is proper to consider their *comprehension* and their *extension**.

The *comprehension* of an idea regards all the essential modes and properties of it: So *body*, in its *comprehension*, takes in *solidity*, *figure*, *quantity*, *mobility*, &c. So a *bowl*, in its *comprehension*, includes *roundness*, *volubility*, &c.

The *extension* of an universal idea regards all the particular kinds and single beings that are contained under it, So a *body* in its *extension* includes *sun*, *moon*, *star*, *wood*, *iron*, *plant*, *animal*, &c. which are several *species*, or *individuals*, under the general name of *body*. So a *bowl*, in its *extension*, includes a *wooden* bowl, a *brass* bowl, a *white* and *black* bowl, a *heavy* bowl, &c. and all kinds of bowls, together with all the particular individual bowls in the world.

Note. The *comprehension of an idea* is sometimes taken in so large a sense, as not only to include the essential attributes, but all the properties, modes, and relations whatsoever, that belong to any being, as will appear, *Chap.* VI.

This

* *Note*, The word *extension* here is taken in a more *logical* sense, and not in a *physical* and *mathematical* sense.

This account of *genus* and *species* is part of that famous doctrine of *universals*, which is taught in the schools, with divers other formalities belonging to it; for it is in this place that they introduce *difference*, which is the primary essential mode, and *property*, or the secondary essential mode, and *accident*, or the accidental mode; and these they call the *five predicables*, because every thing that is affirmed concerning any being must be either the *genus*, the *species*, the *difference*, some *property*, some *accident*: But what farther is necessary to be said concerning these things will be mentioned when we treat of *definition*.

Having finished the doctrine of *universal* and *particular ideas*, I should take notice of another division of them, which also hath respect to their *objects*; and that is, they are either *real* or *imaginary*.

Real ideas are such as have a just foundation in nature, and have real objects, or exemplars, which did, or do, or may actually exist, according to the present state and nature of things; such are all our ideas of *long*, *broad*, *swift*, *slow*, *wood*, *iron*, *men*, *horses*, *thoughts*, *spirits*, a cruel *master*, a proud *beggar*, a *man* seven feet high.

Imaginary ideas, which are also called *fantastical*, or *chimerical*, are such as are made by enlarging, diminishing, uniting, dividing real ideas in the mind, in such a manner, as no objects or exemplars did or ever will exist, according to the present course of nature, though the several parts of these ideas are borrowed from real objects; such are the conceptions we have of a *centaur*, a *satyr*, a *golden mountain*, a *flying horse*, a *dog without a head*, a *bull less than a mouse*, or a *mouse as big as a bull*, and a *man twenty feet high*.

Some of these fantastic ideas are *possible*, that is, they are not utterly inconsistent in the nature of things; and therefore it is within the reach of divine power to make such objects; such are most of the instances already given: But *impossibles* to carry an utter inconsistence in the ideas which are joined; such are *self-active matter*, and *infinite* or *eternal men*, a *pious man without honesty*, or *heaven without holiness*.

SECT. IV.

The division of Ideas, with regard to their Qualities.

IDEAS, with regard to their *qualities*, afford us these several divisions of them. 1. They are either *clear* and

diſtinct, or *obſcure* and *confuſed*. 2. They are *vulgar* or *learned*. 3. They are *perfect* or *imperfect*. 4. They are *true* or *falſe*.

I. Our ideas are either *clear* and *diſtinct*, or *obſcure* and *confuſed*.

Several writers have diſtinguiſhed the *clear ideas* from thoſe that are *diſtinct*; and the *confuſed ideas* from thoſe that are *obſcure*; and it muſt be acknowledged there may be ſome difference between them; for it is the *clearneſs* of ideas for the moſt part makes them *diſtinct*; and the *obſcurity* of ideas is one thing that will always bring a ſort of *confuſion* into them. Yet, when theſe writers come to talk largely upon this ſubject, and to explain and adjuſt their meaning with great nicety, I have generally found that they did not keep up the diſtinction they firſt deſigned, but they confound the one with the other. I ſhall therefore treat of *clear* or *diſtinct ideas*, as one and the ſame ſort, and *obſcure* or *confuſed ideas*, as another.

A *clear* and *diſtinct idea*, is that which repreſents the object of the mind with full evidence and ſtrength, and plainly diſtinguiſhes it from all other objects whatſoever.

An *obſcure* and *confuſed* idea repreſents the object either ſo faintly, ſo imperfectly, or ſo mingled with other ideas, that the object of it doth not appear plain to the mind, nor purely in its own nature, nor ſufficiently diſtinguiſhed from other things.

When we ſee the ſea and ſky nearer at hand, we have a *clear* and *diſtinct idea* of each; but, when we look *far* toward the horizon, eſpecially in a miſty day, our ideas of both are but *obſcure* and *confuſed*; for we know not which is *ſea*, and which is *ſky*. So when we look at the *colours* of the rainbow, we have a *clear idea* of the *red*, the *blue*, the *green*, in the *middle* of their ſeveral arches, and a *diſtinct idea* too, while the eye fixes there; but, when we conſider the *border* of thoſe colours; they ſo run into one another, that it renders their ideas *confuſed* and *obſcure*: So the idea which we have of *our brother*, or *our friend*, whom we ſee daily, is *clear* and *diſtinct*; but, when the abſence of many years has injured the idea, it becomes *obſcure* and *confuſed*.

Note here, That ſome of our ideas may be very *clear* and *diſtinct* in one reſpect, and very *obſcure* and *confuſed* in another. So when we ſpeak of a *Chiliagonum*, or a *figure* of

of a thousand angles, we may have a *clear* and *distinct rational idea* of the number *one thousand angles*; for we can demonstrate various properties concerning it by reason: But the *image*, or *sensible idea*, which we have of the figure, is but *confused* and *obscure*; for we cannot precisely distinguish it by fancy from the image of a *figure that has nine hundred angles*, or *nine hundred and ninety*. So when we speak of the *infinite divisibility of matter*, we always keep in our minds a very clear and distinct idea of *division* and *divisibility*; but, after we have made a little progress in dividing, and come to parts that are far too small for the reach of our senses, then our *ideas* or *sensible images* of these little bodies become *obscure* and *indistinct*, and the idea of *infinite* is very *obscure*, *imperfect*, and *confused*.

II. *Ideas* are either *vulgar* or *learned*. A *vulgar idea* represents to us the most obvious and sensible appearances that are contained in the object of them: but a *learned idea* penetrates farther into the nature, properties, reasons, causes, and effects of things. This is best illustrated by some examples.

It is a *vulgar idea* that we have of a *rainbow*, when we conceive a large arch in the clouds, made up of various colours parallel to each other: But it is a *learned idea* which a philosopher has when he considers it as the various reflections and refractions of sun-beams, in drops of falling rain. So it is a *vulgar idea*, which we have of the *colours of solid bodies*, when we perceive them to be, as it were, a red, or blue, or green tincture of the surface of those bodies: But it is a *philosophical idea*, when we consider the *various colours* to be nothing else but different sensations excited in us by the variously refracted rays of light, reflected on our eyes in a different manner, according to the different size, or shape, or situation of the particles of which the surfaces of those bodies are composed. It is a *vulgar idea* which we have of a *watch* or *clock*, when we conceive of it as a pretty instrument, made to shew us the hour of the day: But it is a *learned idea* which the watchmaker has of it, who knows all the several parts of it, the spring, the balance, the chain, the wheels, their axles, &c. together with the various connections and adjustments of each part, whence the exact and uniform motion

tion of the index is derived, which points to the minute or the hour. So, when a common underſtanding reads *Virgil*'s *Æneid*, he has but a *vulgar idea* of that poem, yet his mind is naturally entertained with the ſtory, and his ears with the verſe: But, when a critic, or a man who has ſkill in poeſy, reads it, he has a *learned idea* of its peculiar beauties, he taſtes and reliſhes a ſuperior pleaſure; he admires the Roman Poet, and wiſhes he had known the Chriſtian Theology, which would have furniſhed him with nobler materials and machines than all the Heathen Idols.

It is with a *vulgar idea* that the world beholds the *Cartoons* of *Raphael* at Hampton Court, and every one feels his ſhare of pleaſure and entertainment: But a *painter* contemplates the wonders of that Italian pencil, and ſees a thouſand beauties in them which the vulgar eye neglected: His *learned ideas* give him a tranſcendent delight, and yet, at the ſame time, diſcover the blemiſhes which the common gazer never obſerved.

III. *Ideas* are either *perfect* or *imperfect*, which are otherwiſe called *adequate* or *inadequate*.

Thoſe are *adequate ideas* which perfectly repreſent their archetypes or objects. *Inadequate ideas* are but a partial, or incomplete repreſentation of thoſe archetypes to which they are referred.

All our *ſimple ideas* are in ſome ſenſe *adequate* or *perfect*, becauſe ſimple ideas, conſidered merely as our firſt perceptions, have no parts in them: So we may be ſaid to have a perfect idea of *white*, *black*, *ſweet*, *ſour*, *length*, *light*, *motion*, *reſt*, &c. We have alſo a perfect idea of various figures, as a *triangle*, a *ſquare*, a *cylinder*, a *cube*, a *ſphere*, which are complex ideas: But, our idea or image of a *figure of a thouſand ſides*, our idea of the *city of London*, or the *powers of a loadſtone*, are very imperfect, as well as our ideas of *infinite length* or *breadth*, *infinite power*, *wiſdom*, or *duration*; for the idea of *infinite* is endleſs and ever growing, and can never be completed.

Note 1. When we have a *perfect* idea of any thing in all its parts, it is called a *complete idea*; when in all its properties, it is called *comprehenſive*. But, when we have but an *inadequate* and *imperfect* idea, we are only ſaid to *apprehend* it; therefore we uſe the term *apprehenſion* when we ſpeak of our knowledge of God, who can never be *comprehended* by his creatures.

Note

Note 2. Though there are a multitude of ideas which may be called *perfect*, or *adequate*, in a vulgar sense, yet there are scarce any ideas which are *adequate, comprehensive*, and *complete*, in a philosophical sense; for there is scarce any thing in the world that we know, as to all the parts and powers and properties of it, in perfection. Even so plain an idea as that of a *triangle*, has, perhaps, infinite properties belonging to it, of which we know but a few. Who can tell what are the shapes and positions of those particles, which cause all the variety of colours that appear on the surface of things? Who knows what are the figures of the little corpuscles that compose and distinguish different bodies? The ideas of *brass, iron, gold, wood, stone, hyssop*, and *rosemary*, have an infinite variety of hidden mysteries contained in the shape, size, motion, and position of the little particles of which they are composed; and, perhaps, also infinite unknown properties and powers, that may be derived from them. And, if we arise to the *animal* world, or the world of *spirits*, our knowledge of them must be amazingly imperfect, when there is not the least *grain of sand*, or *empty space*, but has too many questions and difficulties belonging to it for the wisest philosopher upon earth to answer and resolve.

IV. Our *ideas* are either *true* or *false*; for, an idea being the representation of a thing in the mind, it must be either a *true* or a *false representation* of it. If the idea be conformable to the object or archetype of it, it is a *true idea*; if not, it is a *false* one. Sometimes our ideas are referred to things really existing without us, as their archetypes. If I see bodies *in their proper colours*, I have a *true idea*: But, when a man under the jaundice sees *all bodies yellow*, he has a *false idea* of them. So, if we see the *sun* or *moon rising* or *setting*, our idea represents them *bigger* than when they are *on the meridian*: And in this sense it is a *false* idea, because those heavenly bodies are all day and all night of the same bigness. Or, when I see a *straight staff appear crooked* while it is half under the water, I say the water gives me a *false* idea of it. Sometimes our ideas refer to the ideas of other men, denoted by such a particular word, as their archetypes: So, when I hear a *Protestant* use the words *church* and *sacraments*, if I understand

by these words a *congregation of faithful men, who profess Christianity*, and the two *ordinances*, baptism and the Lord's supper, I have a *true* idea of those words in the common sense of Protestants: But, if the man who speaks of them be a *Papist*, he means the *church of Rome and the seven sacraments*, and then I have a *mistaken* idea of those words, as spoken by him, for he has a different sense and meaning: And, in general, whensoever I mistake the sense of any speaker or writer, I may be said to have a *false* idea of it.

Some think that *truth* or *falshood* properly belongs only to *propositions*, which shall be the subject of discourse in the Second Part of *Logic*; for, if we consider *ideas* as mere impressions upon the mind, made by outward objects, those impressions will ever be conformable to the laws of nature in such a case: The *water* will make a *stick* appear *crooked*, and the *horizontal air* will make the *sun* and *moon* appear *bigger*. And, generally, where there is *falshood* in *ideas*, there seems to be some *secret* or *latent proposition*, whereby we judge falsely of things. This is more obvious where we take up the words of a writer or speaker in a mistaken sense, for we join his words to our own ideas, which are different from his. But, after all, since ideas are pictures of things, it can never be very improper to pronounce them to be *true* or *false*, according to their *conformity* or *nonconformity* to their exemplars.

CHAP. IV.

Of WORDS, *and their several Divisions, together with the Advantage and Danger of them.*

SECT. I.

Of WORDS *in general, and their Use.*

THOUGH our ideas are first acquired by the perception of objects, or by various *sensations* and *reflections*,

fections, yet we convey them to each other by the means of certain ſounds, or written marks, which we call *words*; and a great part of our knowledge is both obtained and communicated by theſe means, which are called *ſpeech* or *language*.

But, as we are led into the knowledge of things by *words*, ſo we are oftentimes led into error or miſtake by the uſe or abuſe of *words* alſo. And, in order to guard againſt ſuch miſtakes, as well as to promote our improvement in knowledge, it is neceſſary to acquaint ourſelves a little with *words* and *terms*. We ſhall begin with theſe obſervations.

Obſervation 1. Words (whether they are ſpoken or written) have no natural connection with the ideas they are deſigned to ſignify, nor with the things which are repreſented in thoſe ideas. There is no manner of affinity between the ſounds *white* in Engliſh, or *blanc* in French, and *that colour* which we call by that name; nor have the letters, of which theſe words are compoſed, any natural aptneſs to ſignify that colour rather than *red* or *green*. Words and names, therefore, are mere *arbitrary ſigns*, invented by men to communicate their thoughts or ideas to one another.

Obſerv. 2. If one ſingle word were appointed to expreſs one ſimple idea, and nothing elſe, as *white*, *black*, *ſweet*, *ſour*, *ſharp*, *bitter*, *extenſion*, *duration*, there would be ſcarce any miſtake about them.

But alas! it is a common unhappineſs in language, that different *ſimple ideas* are ſometimes expreſſed by the *ſame word*; ſo the words *ſweet* and *ſharp* are applied both to the objects of hearing and taſting, as we ſhall ſee hereafter; and this, perhaps, may be one cauſe or foundation of obſcurity and error ariſing from words.

Obſerv. 3. In communicating our complex ideas to one another, if we could join as many peculiar and appropriated words together in one ſound, as we join ſimple ideas to make one complex one, we ſhould ſeldom be in danger of miſtaking: When I expreſs the taſte of an *apple*, which we call the *bitter ſweet*, none can miſtake what I mean.

Yet this ſort of *compoſition* would make all language a moſt tedious and unwieldly thing, ſince moſt of our ideas

are

are complex, and many of them have eight or ten simple ideas in them; so that the remedy would be worse than the disease; for, what is now expressed in one short word, as *month*, or *year*, would require two lines to express it. It is necessary, therefore, that *single words* be invented to express *complex ideas*, in order to make language short and useful.

But here is our great infelicity, that when *single words* signify *complex ideas*, one word can never distinctly manifest all the *parts* of a complex idea; and thereby it will often happen, that one man includes *more* or *less* in his idea, than another does, while he affixes the *same* word to it. In this case, there will be danger of mistake between them, for they do not mean the *same object*, though they use the *same name*. So, if one person or nation, by the word *year*, mean twelve months or thirty days each, that is, three hundred and sixty days, another intend a *solar year* of three hundred sixty-five days, and a third mean a *lunar year*, or twelve *lunar months*, that is, three hundred fifty four days, there will be a great variation and error in their account of things, unless they are well apprised of each other's meaning before hand. This is supposed to be the reason why some ancient histories, and prophecies, and accounts of chronology, are so hard to be adjusted. And this is the true reason of so furious and endless debates on many points of divinity; the words *church*, *worship*, *idolatry*, *repentance*, *faith*, *election*, *merit*, *grace*, and many others, which signify very *complex ideas*, are not applied to include just the same simple ideas, and the same number of them, by the various contending parties; thence arise confusion and contest.

Obser. 4. Though a *single name* does not certainly manifest to us all the *parts* of a *complex idea*, yet it must be acknowledged, that, in many of our *complex ideas*, the single name may point out to us some *chief property* which belongs to the thing that the word signifies; especially when the word or name is traced up to the original, through several languages from whence it is borrowed. So an *apostle* signifies *one who is sent forth*.

But this tracing of a word to its original, (which is called *etymology*) is sometimes a very precarious and uncertain thing;

thing; and, after all, we have made but little progress towards the attainment of the full meaning of a *complex idea*, by knowing some one chief property of it. We know but a small part of the notion of an *apostle*, by knowing barely that he is *sent forth*.

Obsery. 5. Many (if not most) of our words which are applied to *moral* and *intellectual ideas*, when traced up to their original in the learned languages, will be found to signify *sensible* and *corporeal* things. Thus, the words *apprehension*, *understanding*, *abstraction*, *invention*, *idea*, *inference*, *prudence*, *religion*, *church*, *adoration*, &c. have all a corporeal signification in their original. The name *spirit* itself signifies *breath* or *air*, in Latin, Greek, and Hebrew: Such is the poverty of all languages, they are forced to use these names for *incorporeal* ideas, which thing has a tendency to error and confusion.

Obsery. 6. The last thing I shall mention, that leads us into many a mistake, is, the multitude of objects that one name sometimes signifies: There is almost an infinite variety of things and ideas, both simple and complex, beyond all the words that are invented in any language; hence it becomes almost necessary that one name should signify several things. Let us but consider the two colours of *yellow* and *blue*; if they are mingled together in any considerable proportion they make a *green*: Now, there may be infinite differences of the proportions in the mixture of *yellow* and *blue*; and yet we have only these three words, *yellow*, *blue*, and *green*, to signify all of them, at least by one single term.

When I use the word *shore*, I may intend thereby a *coast of land near the sea*, or *a drain to carry off water*, or *a prop to support a building*; and by the sound of the word *porter*, who can tell whether I mean *a man who bears burdens*, or *a servant who waits at a nobleman's gate?* The world is fruitful in the invention of *utensils* of life, and new *characters* and *offices* of men, yet *names* intirely new are seldom invented; therefore old names are almost necessarily used to signify new things, which may occasion much confusion and error in the receiving and communicating of knowledge.

Give me leave to propose one single instance, wherein all these notes shall be remarkably exemplified. It is the word

word *bishop*, which in French is called evêque; upon which I would make these several observations. 1. That there is no natural connection between the sacred office hereby signified, and the letters or sounds which signify this office; for both these words, evêque or *bishop*, signify the same office, though there is not one letter alike in them; nor have the letters which compose the English or the French word any thing sacred belonging to them, more than the letters that compose the words *king* or *soldier*. 2. If the meaning of a word could be learned by its derivation or etymology, yet the original derivation of words is oftentimes very dark and unsearchable; for who would imagine that each of these words are derived from the Latin *episcopus*, or the Greek Episkopos. Yet, in this instance, we happen to know certainly the true derivation; the French being anciently writ *eveſque*, is borrowed from the first part of the Latin word; and the old English *biscop* from the middle of it. 3. The original Greek word signifies an *overlooker*, or one who stands higher than his fellows, and overlooks them: It is a compound word, that primarily signifies *sensible ideas*, translated to signify or include several *moral* or *intellectual ideas*; therefore all will grant that the nature of the office can never be known by the mere sound or sense of the word *overlooker*. 4. I add farther, the word *bishop* or *episcopus*, even when it is thus translated from a sensible idea, to include several intellectual ideas, may yet equally signify an *overseer* of the poor; an *inspector* of the customs; a *surveyor* of the highways; a *supervisor* of the excise, &c. but, by the consent of men, and the language of scripture, it is appropriated to signify a *sacred office in the church*. 5. This very idea and name, thus translated from things sensible, to signify a spiritual and sacred thing, contains but one property of it, namely, *one that has the oversight or care over others*; but does not tell us whether it includes a *care over one church* or *many*; over the *laity*, or the *clergy*. 6. Thence it follows, that those who, in the complex idea of the word *bishop*, include an oversight over *the clergy*, or over a *whole diocese* of people, a *superiority* to presbyters, a distinct *power* of ordination, &c. must necessarily disagree with those who include in it only the care of a single congregation. Thus, according to

to the various opinions of men, this word signifies a *pope*, a Gallican *bishop*, a Lutheran *superintendent*, an English *prelate*, a *pastor of a single assembly*, or a *presbyter* or *elder*. Thus they quarrel with each other perpetually: and it is well if any of them all have hit precisely the sense of the sacred writers, and included just the same ideas in it, and no others.

I might make all the same remarks on the word *church* or *kirk*, which is derived from KURIOU OIKOS, or *the house of the Lord*, contracted into *Kyriock*, which some suppose to signify *an assembly of Christians*, some take it for *all the world that professes Christianity*, and some make it to mean only *the clergy*; and on these accounts it has been the occasion of as many and as furious controversies as the word *bishop* which was mentioned before.

SECT. II.

Of Negative and Positive Terms.

FROM these, and other considerations, it will follow, that, if we could avoid error in our pursuit of knowledge, we must take good heed to the use of *words* and *terms*, and be acquainted with the various kinds of them.

1. Terms are either *positive* or *negative*.

Negative terms are such as have a little word or syllable of denying joined to them, according to the various idioms of every language; as *unpleasant*, *imprudent*, *immortal*, *irregular*, *ignorant*, *infinite*, *endless*, *lifeless*, *deathless*, *nonsense*, *abyss*, *anonymous*, where the prepositions *un*, *im*, *in*, *non*, *a*, *an*, and the termination *less*, signify a negation, either in English, Latin, or Greek.

Positive terms are those which have no such negative appendices belonging to them, as *life*, *death*, *end*, *sense*, *mortal*.

But so unhappily are our words and ideas linked together, that we can never know which are *positive ideas*, and which are *negative*, by the word that is used to express them, and that for these reasons:

1*st*, There are some *positive terms* which are made to signify a *negative idea*; as *dead* is properly a thing that is deprived

prived of *life*; *blind* implies a negation or privation of *sight*; *deaf* a want of *hearing*; *dumb* a denial of *speech*.

2*dly*, There are also some *negative terms* which imply *positive ideas*, such as *immortal* and *deathless*, which signify *ever living*, or a continuance in life: *Insolent*, signifies rude and haughty; *indemnify*, to keep safe; and *infinite*, perhaps has a *positive idea* too, for it is an idea ever growing; and when it is applied to *God*, it signifies his *complete perfection*.

3*dly*, There are both *positive* and *negative terms* invented to signify the *same*, instead of *contrary* ideas; as *unhappy* and *miserable*, *sinless* and *holy*, *pure* and *undefiled*, *impure* and *filthy*, *unkind* and *cruel*, *irreligious* and *prophane*, *unforgiving* and *revengeful*, &c. and there is a great deal of beauty and convenience derived to any language from this variety of expression; though sometimes it a little confounds our conceptions of *being* and *not-being*, our *positive* and *negative* ideas.

4*thly*, I may add also, that there are some words which are *negative* in their *original* language, but seem *positive* to an Englishman, because the negation is unknown; as *abyss*, a place without a bottom; *anodyne*, an easing medicine; *amnesty*, an unremembrance, or general pardon; *anarchy*, a state without government; *anonymous*, that is, nameless; *inept*, that is, not fit; *iniquity*, that is, unrighteousness; *infant*, one that cannot speak, namely, a child; *injurious*, not doing justice or right.

The way therefore to know whether any idea be *negative* or not, is to consider whether it primarily imply the absence of any positive being, or mode of being; if it doth, then it is a *negation*, or *negative idea*; otherwise it is a *positive* one, whether the word that expresses it be positive or negative. Yet, after all, in many cases, this is very hard to determine, as in *amnesty*, *infinite*, *abyss*, which are originally relative terms, but they signify *pardon*, &c. which seem to be positive. So *darkness*, *madness*, *clown*, are positive terms, but they imply the want of *light*, the want of *reason*, and the want of *manners*; and perhaps these may be ranked among the *negative* ideas.

Here *note*, That in the English tongue *two negative* terms are equal to *one positive*, and signify the same thing,

as

as *not unhappy*, signifies *happy*; *not immortal*, signifies *mortal*; he is *no imprudent man*, that is, he is a *man of prudence*: But the sense and force of the word, in such a negative way of expression, seem to be a little diminished.

SECT. III.

Of Simple and Complex Terms.

II. TERMS are divided into *simple* or *complex*. A *simple term* is one word, a *complex term* is when more words are used to signify one thing.

Some terms are *complex in words, but not in sense*; such is the *second Emperor of Rome*; for it excites in our mind only the idea of one man, namely, *Augustus*.

Some terms are *complex in sense but not in words*; so when I say an *army*, a *forest*, I mean a *multitude of men* or *trees*; and almost all our *moral ideas*, as well as many of our *natural* ones, are expressed in this manner; *Religion*, *piety*, *loyalty*, *knavery*, *theft*, include a variety of ideas in each term.

There are other terms which are *complex both in words and sense*; so when I say, a *fierce dog*, or a *pious man*, it excites an idea, not only of those two creatures, but of their peculiar characters also.

Among the terms that are *complex in sense, but not in words*, we may reckon those simple terms which contain a *primary* and a *secondary* idea in them; as when I hear my neighbour speak that which is not true, and I say to him, *This is not true*, or *this is false*, I only convey to him the naked idea of his error; this is the *primary idea*: But if I say *it is a lie*, the word *lie* carries also a *secondary idea* in it, for it implies both the falsehood of the speech, and my reproach and censure of the speaker. On the other hand, if I say *it is a mistake*, this carries also a *secondary idea* with it; for it not only refers to the falsehood of his speech, but includes my tenderness and civility to him at the same time. Another instance may be this; when I use the word *incest*, *adultery*, and *murder*, I convey to another not only the *primary idea* of those actions, but I include also the *secondary idea* of their unlawfulness, and my abhorrence of them.

Note 1ſt, Hence it comes to paſs, that among words which ſignify the ſame *principal ideas*, ſome are *clean* and *decent*, others *unclean*; ſome *chaſte*, others *obſcene*; ſome are *kind*, others are *affronting* and *reproachful*, becauſe of the *ſecondary idea* which cuſtom has affixed to them. And it is the part of a wiſe man, when there is a neceſſity of expreſſing any *evil actions*, to do it either by a word that has a ſecondary idea of *kindneſs* or *ſoftneſs*, or a word that carries with it an idea of *rebuke* and *ſeverity*, according as the caſe requires: So when there is a neceſſity of expreſſing things *unclean* or *obſcene*, a wiſe man will do it in the moſt decent language, to excite as few uncleanly ideas as poſſible in the minds of the hearers.

Note 2d, In length of time, and by the power of cuſtom, words ſometimes change their *primary ideas*, as ſhall be declared, and ſometimes they have changed their *ſecondary ideas*, though the *primary ideas* may remain: So words that were once *chaſte* by frequent uſe grow *obſcene* and *uncleanly*; and words that were once *honourable* may, in the next generation, grow *mean* and *contemptible*. So the word *dame* originally ſignified a miſtreſs of a family, who was a *lady*; and it is uſed ſtill in the *Engliſh* law to ſignify a *lady*, but in common uſe now a-days it repreſents a *farmer's wife, or a miſtreſs of a family of the lower rank in the country*. So thoſe words of *Rabſhaketh*, Iſa. xxxvi. 12. in our tranſlation, *(eat their own dung*, &c.) were doubtleſs decent and clean language, when our tranſlators wrote them, above a hundred years ago. The word *eat* has maintained its old ſecondary idea and inoffenſive ſenſe to this day; but the *other word* in that ſentence has by cuſtom acquired a more uncleanly idea, and ſhould now rather be changed into a more decent term, and ſo it ſhould be read in public, unleſs it ſhould be thought more proper to omit the ſentence.*

For this reaſon it is that the Jewiſh Rabbins have ſupplied other chaſte words in the margin of the Hebrew Bible, where the words of the text, through time and cuſtom, are degenerated, ſo as to carry any baſe and *unclean ſecondary idea* in them; and they read the word which is in the

* So in ſome places of the ſacred hiſtorians, where it is written, *Every one that piſſeth againſt the wall*, we ſhould read, *every male*.

the margin, which they call *keri*, and not that which was written in the text, which they called *chetib*.

SECT. IV.

Of Words Common and Proper.

III. *WORDS* and *names* are either *common* or *proper*. *Common names* are such as stand for universal ideas, or a whole rank of beings, whether general or special. These are called *appellatives*; so *fish*, *bird*, *man*, *city*, *river*, are common names; and so are *trout*, *eel*, *lobster*, for they all agree to many *individuals*, and some of them to many *species*: But *Cicero*, *Virgil*, *Bucephalus*, *London*, *Rome*, *Ætna*, the *Thames*, are proper names, for each of them agrees only to one *single* being.

Note here, first, That a *proper* name may become in some sense *common*, when it hath been given to several beings of the same kind; so *Cæsar*, which was the proper name of the first emperor *Julius*, became also a common name to all the following emperors. And *tea*, which was the proper name of one sort of *Indian* leaf, is now-a-days become a common name for many infusions of herbs, or plants, in water; a *sage-tea*, *alehoof tea*, *limon tea*, &c. So *Peter*, *Thomas*, *John*, *William*, may be reckoned common names also, because they are given to many persons, unless they are determined to signify a single person at any particular time or place.

Note in the *second* place, That a *common* name may become *proper* by custom, or by the time, or place, or persons that use it; as in Great-Britain, when we say *the king*, we mean our present rightful sovereign *King* George, who now reigns; when we speak of *the prince*, we intend his royal highness George *Prince of Wales*: If we mention the *city*, when we are near *London*, we generally mean the *city of London*: when in a country town we say the *parson*, or the *esquire*, all the parish knows who are the single persons intended by it; so when we are speaking of the history of the New Testament, and use the words *Peter*, *Paul*, *John*, we mean those three apostles,

Note in the *third* place, That any *common* name whatsoever

ever is made *proper* by terms of particularity added to it, as the common words *pope*, *king*, *horse*, *garden*, *book*, *knife*, &c. are designed to signify a singular idea, when we say, the *present pope*; *the king of Great Britain*; *the horse that won the last plate at Newmarket*; *the royal garden at Kensington*; *this book*, *that knife*, &c.

SECT. V.

Of Concrete and Abstract Terms.

IV. WORDS or *terms* are divided into *abstract* and *concrete*.

Abstract terms signify the mode or quality of a being, without any regard to the subject in which it is; as *whiteness*, *roundness*, *length*, *breadth*, *wisdom*, *mortality*, *life*, *death*.

Concrete terms, while they express the quality, do also either express or imply, or refer to some subject to which it belongs; as *white*, *round*, *long*, *broad*, *wise*, *mortal*, *living*, *dead*. But these are not always noun adjectives in a grammatical sense; for a *fool*, a *knave*, a *philosopher*, and many other concretes, are *substantives*, as well as *knavery*, *folly*, and *philosophy*, which are the *abstract* terms that belong to them.

SECT. VI.

Of Univocal and Equivocal Words.

V. WORDS and *terms* are either *univocal* or *equivocal*.

Univocal words are such as signify but one idea, or at least but one sort of thing; *equivocal* words are such as signify two or more different ideas, or different sorts of objects. The words *book*, *bible*, *fish*, *house*, *elephant*, may be called *univocal* words; for I know not that they signify any thing else but those ideas to which they are generally affixed; but *head* is an equivocal word, for it signifies the head of a *nail*, or of a *pin*, as well as of an *animal*: *Nail* is an equivocal word, it is used for the *nail of the hand*, or *foot*, and for an *iron nail* to fasten any thing. *Post* is equivocal, it is a *piece of timber*, or *a swift messenger*. A *church* is a *religious*

religious assembly, or the *large fair building* where they meet; and sometimes the same word means a *synod of bishops*, or of *presbyters*, and in some places it is the *pope and a general council*.

Here let it be noted, that when two or more words signify the same thing, as *wave* and *billow*, *mead* and *meadow*, they are usually called *synonymous* words: But it seems very strange, that words, which are directly contrary to each other, should sometimes represent almost the same ideas; yet thus it is in some few instances; a *valuable*, or an *invaluable blessing*; a *shameful*, or a *shameless villain*; a *thick skull*, or a *thin skull'd fellow*, a mere *paper skull*; a man of a *large conscience*, *little conscience*, or *no conscience*; a *famous rascal*, or an *infamous* one. So uncertain a thing is human language, whose foundation and support is custom!

As words signifying the same thing are called *synonymous*, so equivocal words, or those which signify several things, are called *homonymous*, or *ambiguous*; and when persons use such ambiguous words with a design to deceive, it is called *equivocation*.

Our *simple ideas*, and especially the *sensible qualities*, furnish us with a great variety of *equivocal* or *ambiguous words*; for these being the first and most natural ideas we have, we borrow some of their names, to signify many other ideas, both simple and complex. The word *sweet* expresses the pleasant perceptions of almost every sense; *sugar* is sweet, but it hath not the same sweetness as *music*: nor hath music the sweetness of a *rose*; and a sweet *prospect* differs from them all: Nor yet have any of these the same sweetness as *discourse*, *counsel*, or *meditation* hath; yet the royal Psalmist saith of a man, *We took sweet counsel together*; and of God, *My meditation of him shall be sweet*. *Bitter* is also such an equivocal word; there is bitter *wormwood*, there are bitter *words*, there are bitter *enemies*, and a bitter *cold morning*. So there is a sharpness in *vinegar*, and there is a sharpness in *pain*, in *sorrow*, and in *reproach!* there is a sharp *eye*, a sharp *wit*, and a sharp *sword*: But there is not one of these seven *sharpnesses* the same as another of them; and a sharp *east wind* is different from them all.

These are also *verbs*, or words of action, which are equivocal, as well as *nouns* or *names*. The words to *bear*,

to *take*, to *come*, to *get*, are sufficient instances of it; as when we say, to bear *a burden*, to bear *sorrow* or reproach, to bear *a name*, to bear *a grudge*, to bear *fruit*, or to bear *children*; the word *bear* is used in very different senses: And so is the word *get*, when we say, to get *money*, to get *in*, to get *off*, to get *ready*, to get a *stomach*, and to get a *cold*, &c.

There is also a great deal of ambiguity in many of the English particles; as *but*, *before*, *beside*, *with*, *without*, *that*, *then*, *there*, *for*, *forth*, *above*, *about*, &c. of which grammars and dictionaries will sufficiently inform us.

SECT. VII.

Various Kinds of Equivocal Words.

IT would be endless to run through all the varieties of words and terms which have different senses applied to them; I shall only mention therefore a few of the most remarkable and most useful distinctions among them.

1st, The first division of equivocal words lets us know that some are equivocal *only in their sound* or *pronunciation*; others are equivocal *only in writing*; and others *both in writing and in sound*.

Words equivocal in *sound only* are such as these; the *rein* of a bridle, which hath the same sound with the *reign* of a king, or a shower of *rain*; but all three have different letters, and distinct spelling. So, *might*, or strength, is equivocal in sound, but differs in writing from *mite*, a little animal, or a small piece of money. And the verb *to write* has the same sound with *wright* a workman, *right* or equity, and *rite* or ceremony; but it is spelled very differently in them all.

Words equivocal *in writing only* are such as these. To *tear* to pieces, has the same spelling with a *tear*: To *lead*, or guide, has the same letters as *lead*, the metal: And a *bowl* for recreation, is written the same way as a *bowl* for drinking; but the pronunciation for all these is different.

But those words which are most commonly and justly called *equivocal*, are such as are both written and pronounced the same way, and yet have different senses or ideas belonging

belonging to them; such are all the instances which were given in the preceding section.

Among the words which are equivocal in *sound only*, and *not in writing*, there is a large field for persons who delight in jests and puns, in riddles and quibbles, to sport themselves. This sort of words is also used by wanton persons to convey *lewd ideas*, under the covert of expressions capable of a *chaste* meaning, which are called *double entendres*; or when persons speak *falsehood* with a design to deceive, under the covert of *truth*; though, it must be confessed, that all sorts of equivocal words yield sufficient matter for such purposes.

There are many cases also, wherein an equivocal word is used, for the sake of *decency*, to cover a *foul idea*: For the most chaste and modest, and well-bred persons, having sometimes a necessity to speak of the things of nature, convey their ideas in the most inoffensive language by this means. And indeed, the mere poverty of all languages makes it necessary to use *equivocal words* upon many occasions, as the common writings of men, and even the holy book of God, sufficiently manifest.

2*dly*, Equivocal words are usually distinguished, according to their *original*, into such, whose various senses arise from *mere chance* or *accident*, and such as are made equivocal by *design*; as the word *bear* signifies a *shaggy beast*, and it signifies also to *bear* or *carry a burden*; this seems to be the mere effect of *chance*: But if I call my dog *bear*, because he is shaggy, or call one of the northern constellations by that name, from a fancied situation of the stars in the shape of that animal, then it is by *design* that the word is made yet further equivocal.

But because I think this common account of the spring or origin of equivocal words is too slight and imperfect, I shall reserve this subject to be treated of by itself, and proceed to the *third division*.

3*dly*, Ambiguous or *equivocal* words are such as are sometimes taken in a *large and general* sense, and sometimes in a sense *more strict and limited*, and have different ideas affixed to them accordingly. *Religion*, or *virtue*, taken in a large sense, includes both our *duty to God* and *our neighbour*; but in a more strict, limited, and proper sense, *virtue* signifies

ſignifies our *duty towards men*, and *religion* our *duty to God*. *Virtue* may yet be taken in the ſtricteſt ſenſe, and then it ſignifies *power* or *courage*, which is the ſenſe of it in ſome places of the New Teſtament. So *grace*, taken in a large ſenſe, means the *favour of God*, and all the ſpiritual bleſſings that proceed from it, (which is a frequent ſenſe of it in the bible) but in a limited ſenſe it ſignifies *the habit of holineſs* wrought in us by divine favour, or a *complex idea of the Chriſtian virtues*. It may alſo be taken in the ſtricteſt ſenſe, and thus it ſignifies any *ſingle Chriſtian virtue*, as in 2 *Cor.* viii. 6. 7. where it is uſed for *liberality*. So a *city*, in a ſtrict and proper ſenſe, means the *houſes incloſed within the walls*; in a larger ſenſe it reaches to all the *ſuburbs*.

This *larger* and *ſtricter* ſenſe of a word is uſed in almoſt all the ſciences, as well as in theology, and in common life. The word *geography*, taken in a *ſtrict ſenſe*, ſignifies the knowledge of the circles of the earthly globe, and the ſituation of the various parts of the earth; when it is taken in a *little larger ſenſe*, it includes the knowledge of the ſeas alſo; and in the *largeſt ſenſe* of all, it extends to the various cuſtoms, habits and governments of nations.—When an aſtronomer uſes the word *ſtar* in its proper and ſtrict ſenſe, it is applied only to the *fixed ſtars*, but in a large ſenſe it includes the *planets* alſo.

This equivocal ſenſe of words belongs alſo to many proper names: So *Aſia*, taken in the largeſt ſenſe, is one quarter of the world; in a more limited ſenſe it ſignifies *Natolia*, or the *Leſſer Aſia*; but in the ſtricteſt ſenſe it means no more than one little province in *Natolia*, where ſtood the cities of *Epheſus*, *Smyrna*, *Sardis*, &c. And this is the moſt frequent ſenſe of it in the New Teſtament. *Flanders* and *Holland*, in a ſtrict ſenſe, are but two ſingle provinces among the ſeventeen, but in a large ſenſe *Holland* includes ſeven of them, and *Flanders* ten.

There are alſo ſome very common and little words in all languages, that are uſed in a more *extenſive*, or more *limited* ſenſe; ſuch as *all*, *every*, *whatſoever*, &c. When the apoſtle ſays, *all men have ſinned*, and *all men muſt die*, *all* is taken in its moſt univerſal and extenſive ſenſe, including *all mankind*, Rom. v. 12. When he appoints *prayer to be made*,

made for all men, it appears, by the following verses, that he restrains the word *all* to signify chiefly *all ranks and degrees of men*, 1 Tim. ii. 1. But when St. *Paul* says, *I please all men in all things*, 1 Cor. x. 33. the word *all* is exceedingly limited, for it reaches no farther than that he pleased *all* those men *whom he conversed with* in *all* things that were *lawful*.

4*thly*, Equivocal words are, in the fourth place, distinguished by their *literal* or *figurative* sense. Words are used in a *proper* or *literal* sense when they are designed to signify those ideas for which they were originally made, or to which they are primarily and generally annexed; but they are used in a *figurative* or *tropical* sense when they are made to signify some things, which only bear either a *reference* or a *resemblance* to the primary ideas of them. So when two princes contend by their armies, we say they are at *war* in a proper sense; but when we say there is a *war* betwixt the winds and the waves in a storm, this is called *figurative*, and the peculiar figure is a *metaphor*. So when the scripture says, *Riches make themselves wings, and fly away as an eagle toward heaven*, the *wings* and the *flight* of the eagle are *proper* expressions; but when *flight* and *wings* are applied to *riches*, it is only by way of *figure* and *metaphor*. So when a man is said to *repent*, or *laugh*, or *grieve*, it is literally taken; but when God is said to *be grieved*, to *repent*, or *laugh*, &c. these are all figurative expressions borrowed from a resemblance to mankind. And when the words *Job* or *Esther* are used to signify those very persons, it is the *literal* sense of them; but when they signify those two books of scripture, this is a *figurative* sense. The names of *Horace*, *Juvenal*, and *Milton*, are used in the same manner, either for *books* or *men*.

When a word, which originally signifies any particular idea or object, is attributed to several other objects, not so much by way of *resemblance*, but rather on the account of some evident *reference* or *relation* to the original idea, this is sometimes peculiarly called an *analogical* word; so a *sound* or *healthy pulse*, a *sound digestion*, *sound sleep*, are all so called with *reference* to a *sound* and *healthy* constitution; but if you speak of *sound doctrine*, or *sound speech*, this is by way of *resemblance* to health; and the words are *metaphorical*.

ical: Yet many times *analogy* and *metaphor* are used promiscuously in the same sense, and not distinguished.

Here *note*, That the design of *metaphorical language*, and *figures of speech*, is not merely to represent our *ideas*, but to represent them with vivacity, spirit, affection, and power; and though they often make a deeper impression on the mind of the hearer, yet they do as often lead him into a mistake, if they are used at improper times and places. Therefore, where the design of the speaker or writer is merely to *explain*, *instruct*, and to lead into the knowledge of naked truth, he ought for the most part to use *plain* and *proper* words if the language affords them, and not to deal much in *figurative* speech. But this sort of terms is used very profitably by *poets* and *orators*, whose business is to move, and persuade, and work on the passions, as well as on the understanding. Figures are also happily employed in proverbial *moral sayings*, by the *wisest* and the *best* of men, to impress them deeper on the memory by *sensible images*; and they are often used for other valuable purposes in the *sacred writings*.

5thly, I might adjoin another *sort of equivocal words*; as there are some which have a different meaning in *common language* from what they have in the *sciences*; the word *passion* signifies the *receiving any action* in a large philosophical sense; in a more limited philosophical sense, it signifies *any of the affections of human nature, as love, fear, joy, sorrow*, &c. But the common people confine it only to *anger*: So the word *simple* philosophically signifies *single*, but vulgarly it is used for *foolish*.

6thly, Other equivocal words are used sometimes in an *absolute* sense, as when God is called *perfect*; which allows of no defect; and sometimes in a *comparative* sense, as good men are oftentimes called *perfect* in scripture, in comparison of those who are much inferior to them in knowledge or holiness: But I have dwelt rather too long upon this subject already, therefore I add no more.

SECT.

SECT. VIII.

The Origin or Causes of Equivocal Words.

NOW, that we may become more skilful in guarding ourselves and others against the danger of mistakes which may arise from *equivocal* words, it may not be amiss to conclude this chapter with a short account of the various ways or means whereby a word changes its signification, or acquires any new sense, and thus becomes *equivocal*, especially if it keeps its old sense also.

1. *Mere chance* sometimes gives the same word different senses; as the word *light* signifies a *body that is not heavy*; and it also signifies the *effect of sun-beams*, or the *medium whereby we see objects*: This is merely accidental, for there seems to be no connection between these two senses, nor any reason for them.

2. *Error* and *mistake* is another occasion of giving various senses to the same word; as when different persons read the names of *priest*, *bishop*, *church*, *Easter*, &c. in the New Testament, they affix different ideas to them, for want of acquaintance with the true meaning of the sacred writer; though it must be confessed, these various senses, which might arise at first from honest mistake, may be culpably supported and propagated by interest, ambition, prejudice, and a party-spirit, on any side.

3. *Time* and *custom* alters the meaning of words. *Knave* heretofore signified a *diligent servant (Gnavus)* and a *villain* was an *under tenant to the lord of the mannour (villicus)* but now both these words carry an idea of wickedness and reproach with them. A *ballad* once signified a solemn and sacred song, as well as one that is trivial, when *Solomon's Song* was called the *ballad of ballads*; but now it is applied to nothing but trifling verse, or comical subjects.

4. Words change their sense by *figures* and *metaphors*, which are derived from some *real analogy* or *resemblance* between several things; as when *wings* and *flight* are applied to *riches*, it signifies only, that the owner may as easily lose them as he would lose a bird who flew away with wings.

And I think, under this head, we may rank those words which

which signify different ideas, by a sort of an unaccountable far-fetcht *analogy*, or distant *resemblance*, that fancy has introduced between one thing and another; as when we say, the *meat* is *green*, when it is *half-roasted*: We speak of *airing linen by the fire*, when we mean *drying* or *warming* it: We call for *round coals* for the chimney, when we mean *large square ones*: And we talk of the *wing of a rabbit*, when we mean the *fore-leg*: The true reason of these appellations we leave to the critics.

5. Words also change their sense by the *special occasion* of using them, *the peculiar manner of pronunciation*, the *sound of the voice*, the *motion of the face*, or *gestures of the body*; so when an angry master says to his servant, *it is bravely done!* or *you are a fine gentleman!* he means just the contrary; namely, *it is very ill done*; *you are a sorry fellow*: It is one way of giving a severe reproach, for the words are spoken by way of *sarcasm*, or *irony*.

6. Words are applied to various senses, by *new ideas* appearing or arising faster than *new words* are framed. So when *gunpowder* was found out, the word *powder*, which before signified only *dust*, was made then to signify that *mixture* or *composition of nitre, charcoal*, &c. And the name *cannon*, which before signified a *law* or a *rule*, is now also given to a *great* gun, which gives laws to nations. So footboys, who had frequently the common name of *Jack* given them, were kept to turn the spit, or to pull off their master's boots; but when instruments were invented for both those services, they were both called *jacks*, though one was of iron, the other of wood, and very different in their form.

7. Words alter their significations according to the *ideas of the various persons, sects*, or *parties*, who use them, as we have hinted before; so when a *Papist* uses the word *heretics*, he generally means the *Protestants*; when a *Protestant* uses the word, he means *any persons who were wilfully* (and perhaps contentiously) *obstinate in fundamental errors*. When a Jew speaks of the *true religion*, he means the *institution of Moses*; when a *Turk* mentions it, he intends the *doctrine of Mahomet*; but when a *Christian* makes use of it, he designs to signify *Christianity*, or the *truths and precepts of the gospel*.

8. Words

8. Words have different significations according to the *book*, *writing*, or *discourse* in which they stand. So in a treatise of *anatomy*, a *foot* signifies that *member in the body of a man*: But in a book of *geometry* or *mensuration*, it signifies *twelve inches*.

If I had room to exemplify most of these particulars in one single word, I know not where to choose a fitter than the word *sound*, which seems as it were by *chance* to signify three distinct ideas, namely, *healthy*, (from *sanus*) as a sound *body*; *noise*, (from *sonus*) as a *shrill* sound; and to *sound* the sea (perhaps from the French *sonde*, a probe, or an instrument to find the depth of water.) From these three, which I may call *original senses*, various *derivative senses* arise; as sound *sleep*, sound *lungs*, sound *wind* and *limb*, a sound *heart*, a sound *mind*, sound *doctrine*, a sound *divine*, sound *reason*, a sound *cask*, sound *timber*, a sound *reproof*, to beat *one* soundly, to sound one's *meaning* or *inclination*, and a sound or narrow *sea*; turn these all into Latin, and the variety will appear plain.

I confess some few of these which I have mentioned, as the different springs of *equivocal* words, may be reduced in some cases to the same original: But it must also be granted, that there may be other ways besides these whereby a word comes to extend its signification, to include various ideas, and become *equivocal*. And though it is the business of a grammarian to pursue these remarks with more variety and particularity, yet it is also the work of a *logician* to give notice of these things, lest darkness, confusion, and perplexity, be brought into our conceptions, by the means of words, and thence our *judgments* and *reasonings* become erroneous.

CHAP. V.

General Directions relating to our IDEAS.

Direction I. *FURNISH yourselves with a rich variety of ideas*; acquaint yourselves with things ancient and modern; things natural, civil and religious;

things domeſtic and national; things of your native land, and of foreign countries; things preſent, paſt and future; and, above all, be well acquainted with God and yourſelves; learn animal nature, and the workings of your own ſpirits.

Such a general acquaintance with things will be of very great advantage.

The *firſt benefit* of it is this; it will aſſiſt the uſe of *reaſon* in all its following operations; it will teach you to *judge* of things *aright*, to *argue juſtly*, and to *methodiſe* your thoughts with *accuracy*. When you ſhall find ſeveral things akin to each other, and ſeveral different from each other, agreeing in ſome part of their idea, and diſagreeing in other parts, you will range your ideas in better order, you will be more eaſily led into a diſtinct knowledge of things, and will obtain a rich ſtore of proper thoughts and arguments upon all occaſions.

You will tell me, perhaps, That you deſign the ſtudy of the *law* or *divinity*; and what good can *natural philoſophy* or *mathematics* do you, or any other ſcience, not directly ſubordinate to your chief deſign? But let it be conſidered, that all ſciences have a ſort of mutual connection; and knowledge of all kinds fits the mind to reaſon and judge better concerning any particular ſubject. I have known a judge upon the bench betray his ignorance, and appear a little confaſed in his ſentiments, about a caſe of ſuſpected murder brought before him, for want of ſome acquaintance with *animal nature* and *philoſophy*.

Another *benefit* of it is this; ſuch a large and general acquaintance with things will ſecure you from perpetual *admirations* and *ſurpriſes*, and guard you againſt that weakneſs of ignorant perſons who have never ſeen any thing beyond the confines of their own dwelling, and therefore they wonder at almoſt every thing they ſee; every thing beyond the ſmoke of their own chimney, and the reach of their own windows, is new and ſtrange to them.

A *third benefit* of ſuch an univerſal acquaintance with things is this; it will keep you from being too *poſitive* and *dogmatical*, from an exceſs of *credulity* and *unbelief*, that is, a readineſs to believe or to deny every thing at firſt hearing; when you ſhall have often ſeen, that ſtrange and uncommon

common things, which often seem incredible, are found to be true; and things very commonly received as true, have been found false.

The *Way of attaining such an extensive treasure of ideas*, is with diligence to apply yourself to read the best books; converse with the most knowing and the wisest of men; and endeavour to improve by every person in whose company you are; suffer no hour to pass away in lazy idleness, an impertinent chattering, or useless trifles: Visit other cities and countries when you have seen your own, under the care of one who can teach you to profit by travelling, and to make wise observations; indulge a just curiosity in seeing the wonders of art and nature; search into things yourselves, as well as learn them from others; be acquainted with men as well as books; learn all things as much as you can at first hand; and let as many of your ideas as possible be the representations of things, and not merely the representations of other mens ideas: Thus your soul, like some noble building, shall be richly furnished with original paintings, and not with mere copies.

Direct. II. *Use the most proper methods to retain that treasure of ideas which you have acquired;* for the mind is ready to let many of them slip, unless some pains and labour be taken to fix them upon the memory.

And more especially let those ideas be laid up and preserved with the greatest care, which are most directly suited, either to your *eternal welfare*, as a *Christian*, or to your particular *station* and *profession* in this life; for, though the former rule recommends an universal acquaintance with things, yet it is but a more general and superficial knowledge that is required or expected of any man, in things which are utterly foreign to his own business: But it is necessary you should have a more particular and accurate acquaintance with those things that refer to your peculiar province and duty in this life, or your happiness in another.

There are some persons who never arrive at any deep, solid, or valuable knowledge in any science, or any business of life, because they are perpetually fluttering over the surface of things in a curious and wandering search of infinite variety; ever hearing, reading, or asking after something new, but impatient of any labour to lay up and

preserve

preserve the ideas they have gained: Their souls may be compared to a looking-glass, that whereſoever you turn it, it receives the images of all objects, but retains none.

In order to preserve your treasure of ideas, and the knowledge you have gained, pursue the following advices, especially in your younger years.

1. *Recollect every day the things you have seen, or heard, or read*, which may have made an addition to your understanding: Read the writings of God and men with diligence and perpetual reviews: Be not fond of hastening to a new book, or a new chapter, till you have well fixed and established in your minds what was useful in the last: Make use of your memory in this manner, and you will sensibly experience a gradual improvement of it, while you take care not to load it to excess.

2. *Talk over the things which you have seen, heard, or learnt, with some proper acquaintance:* This will make a fresh impression on your memory; and if you have no fellow-student at hand, none of equal rank with yourselves, tell it over to any of your acquaintance, where you can do it with propriety and decency; and whether they learn any thing by it or no, your own repetition of it will be an improvement to yourself: And this practice also will furnish you with a *variety of words*, and copious language, to express your thoughts upon all occasions.

3. Commit to writing some of the most considerable improvements which you daily make, at least such hints as may recal them again to your mind, when perhaps they are vanished and lost. And here I think Mr. *Locke's* method of *adversaria*, or *common places*, which he describes in the end of the first volume of his *posthumous works*, is the best; using no learned method at all, setting down things as they occur, leaving a distinct page for each subject, and making an index to the pages.

At the end of every week, or month, or year, you may review your remarks, for these reasons: *First, To judge of your own improvement;* when you shall find that many of your younger collections are either weak and trifling; or if they are just and proper, yet they are grown now so familiar to you, that you will thereby see your own advancement in knowledge. And, in the next place, what

remarks

remarks you find there worthy of your riper observation, you may *note them with a marginal star*, instead of transcribing them, as being worthy of your second year's review, when the others are neglected.

To shorten something of this labour, if the books which you read are your own, mark with a pen, or pencil, the most considerable things in them which you desire to remember. Thus you may read that book the second time over with half the trouble, by your eye running over the paragraphs which your pencil has noted. It is but a very weak objection against this practice to say, *I shall spoil my book*; for I persuade myself, that you did not buy it as a *bookseller*, to sell it again for gain, but as a *scholar*, to improve your mind by it; and if the mind be improved, your advantage is abundant, though your book yields less money to your executors.*

Direct. III. *As you proceed both in learning and in life, make a wise observation what are the ideas, what the discourses and the parts of knowledge that have been more or less useful to yourself or others.* In our younger years, while we are furnishing our minds with a treasure of ideas, our experience is but small, and our judgment weak; it is therefore impossible at that age to determine aright concerning the real *advantage* and *usefulness* of many things we learn. But, when age and experience have matured your judgment, then you will gradually drop the more *useless part* of your younger *furniture*, and be more solicitous to retain that which is most necessary for your welfare in this life, or a better. Hereby you will come to make the same complaint that almost every learned man has done after long experience in study, and in the affairs of human life and religion: *Alas! how many hours, and days, and months, have I lost in pursuing some parts of learning, and in reading some*

* *Note*, this advice of *writing*, *marking*, and *reviewing*, your marks, refers chiefly to those *occasional notions* you meet with either in reading or in conversation: But when you are *directly* and *professedly* pursuing any subject of knowledge in a good system in your younger years, the *system* itself is your *common-place-book*, and must be intirely reviewed. The same may be said concerning any *treatise* which closely, succinctly, and accurately handles any particular theme.

authors, which have turned to no other account, but to inform me that they were not worth my labour and pursuit! Happy the man who has a wise tutor to conduct him through all the sciences in the first years of his study; and who has a prudent friend always at hand to point out to him, from experience, how much of every science is worth his pursuit! And happy the student that is so wise as to follow such advice!

Direct. IV. *Learn to acquire a government over your ideas and your thoughts, that they may come when they are called, and depart when they are bidden.* There are some thoughts that rise and intrude upon us while we shun them; there are others that fly from us, when we would hold and fix them.

If the *ideas* which you would willingly make the matter of your present meditation *are ready to fly from you*, you must be obstinate in the pursuit of them by an habit of fixed meditation; you must keep your soul to the work, when it is ready to start aside every moment, unless you will abandon yourself to be a slave to every wild imagination. It is a common, but it is an unhappy and a shameful thing, that every trifle that comes across the senses or fancy should divert us, that a buzzing fly should teaze our spirits, and scatter our best ideas: But we must learn to be deaf to, and regardless of other things, besides that which we make the present subject of our meditation: And in order to help a wandering and fickle humour, it is proper to have a book or paper in our hands, which has some proper hints of the subject we design to pursue. We must be resolute and laborious, and sometimes conflict with ourselves, if we would be wise and learned.

Yet I would not be too severe in this *rule*: It must be confessed there are *seasons* when the mind, or rather the brain, is *over tired* or *jaded* with study and thinking; or upon some other accounts animal nature may be *languid* or *cloudy*, and unfit to assist the spirit in meditation; at such seasons (provided that they return not too often) it is better sometimes to yield to the present indisposition; for if nature intirely resist, nothing can be done to the purpose, at least in that subject or science. Then you may think it proper to give yourself up to some hours of

leisure

leisure and *recreation*, or *useful idleness*; or if not, then turn your thoughts to some *other alluring subject*, and pore no longer upon the *first*, till some brighter or more favourable moments arise. A student shall do more in one hour, when all things concur to invite him to any special study, than in four hours, at a dull and improper season.

I would also give the same advice, if some *vain*, or *worthless*, or *foolish idea*, will croud itself into your thoughts; and if you find that all your labour and wrestling cannot defend yourself from it, then divert the importunity of that which offends you, by turning your thoughts to some entertaining subject, that may amuse you a little, and draw you off from the troublesome and imposing guest; and many a time also, in such a case, when the impertinent and intruding ideas would divert from present duty, *devotion* and *prayer* have been very successful to overcome such obstinate troublers of the peace and profit of the soul.

If the natural genius and temper be too *volatile*, *fickle*, and *wandering*, such persons ought in a more special manner to apply themselves to *mathematical learning*, and to begin their studies with *arithmetic* and *geometry*; wherein new truths continually arising to the mind, out of the plainest and easiest principles, will allure the thoughts with incredible pleasure in the pursuit: This will give the student such a delighful taste of reasoning, as will fix his attention to the single subject which he pursues, and by degrees will cure the habitual levity of his spirit: But let him not indulge and pursue these so far, as to neglect the prime studies of his designed profession.

CHAP. VI.

Special Rules to direct our Conceptions of Things.

A GREAT part of what has been already written is designed to lay a foundation for those *rules* which may guide and regulate our conceptions of things; this

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is our main buſineſs and deſign in the *firſt part of logic*. Now, if we can but direct our thoughts to a juſt and happy manner in *forming* our ideas of things, the other operations of the mind will not ſo eaſily be perverted; becauſe moſt of our errors in *judgment*, and the weakneſs, fallacy, and miſtakes of our *argumentation*, proceed from the darkneſs, confuſion, defect, or ſome other irregularity in our conceptions.

The rules to aſſiſt and direct our conceptions are theſe:

1. Conceive of things *clearly and diſtinctly* in their *own natures:*
2. Conceive of things *completely* in all their *parts.*
3. Conceive of things *comprehenſively* in all their *properties* and *relations.*
4. Conceive of things *extenſively* in all their *kinds.*
5. Conceive of things *orderly*, or in a proper *method.*

SECT. I.

Of gaining Clear and Diſtinct IDEAS.

THE firſt rule is this: *Seek after a clear and diſtinct conception of things as they are in their own nature, and do not content yourſelves with obſcure and confuſed ideas, where clearer are to be attained.*

There are ſome things indeed whereof diſtinct ideas are ſcarce attainable; they ſeem to ſurpaſs the capacity of the underſtanding in our preſent ſtate; ſuch are the notions of *eternal, immenſe, infinite*, whether this *infinity* be applied to *number*, as an infinite multitude; to *quantity*, as infinite length, or breadth; to *powers* and *perfections*, as ſtrength, wiſdom, or goodneſs, infinite, &c. Though mathematicians, in their way, demonſtrate ſeveral things in the doctrine of *infinites*, yet there are ſtill ſome inſolvable difficulties that attend the ideas of *infinite*, when it is applied to mind or body; and while it is in reality but *an idea ever growing*, we cannot have ſo clear and diſtinct a conception of it as to ſecure us from miſtakes in ſome of our reaſonings about it.

There are many other things that belong to the material world, wherein the ſharpeſt philoſophers have never

yet

yet arrived at clear and distinct ideas; such as the particular *shape, situation, contexture, and motion of the small particles of minerals, metals, plants*, &c. whereby their very natures and essences are distinguished from each other. Nor have we either senses or instruments sufficiently nice and accurate to find them out. There are other things in the world of spirits wherein our ideas are very dark and confused, such as their *union with animal nature, the way of their acting on material beings*, and their *converse with each other*. And though it is a laudable ambition to search what may be known of these matters, yet it is a vast hindrance to the enrichment of our understandings, if we spend too much of our time and pains among *infinites* and *unsearchables*, and those things for the investigation whereof we are not furnished with proper faculties in the present state. It is therefore of great service to the true improvement of the mind to distinguish well between *knowables* and *unknowables*.

As for as things are *knowable* by us, it is of excellent use to accustom ourselves *to clear and distinct ideas*. Now, among many other occasions of the darkness and mistakes of our minds, there are these two things which most remarkably bring *confusion* into our *ideas*.

1. That from our infancy we have had the ideas of things so far connected with the *ideas of words*, that we often mistake words for things, we mingle and confound one with the other.

2. From our youngest years we have been ever ready to consider things not so much in their own natures, as in their *various respects* to ourselves, and chiefly to our *senses*; and we have also joined and mingled the ideas of *some things*, with many *other ideas*, to which they were not akin in their own natures.

In order therefore to a *clear* and *distinct* knowledge of things, we must unclothe them of all these *relations* and *mixtures*, that we may contemplate them naked, and *in their own natures*, and distinguish the subject that we have in view from all other subjects whatsoever: Now, to perform this well, we must here consider the *definition of words*, and the *definition of things*.

SECT.

SECT. II.

Of the definition of Words or Names.

IF we could conceive of things as angels and unbodied ſpirits do, without involving them in thoſe clouds which words and language throw upon them, we ſhould ſeldom be in danger of ſuch miſtakes as are perpetually committed by us in the preſent ſtate; and indeed it would be of unknown advantage to us to accuſtom ourſelves to *form ideas of things without words*, that we might know them in their *own proper natures*. But, ſince we muſt uſe *words*, both to learn and communicate moſt of our notions, we ſhould do it with juſt rules of caution. I have already declared in part, how often and by what means our words become the occaſion of errors in our conceptions of things. To remedy ſuch inconveniences, we muſt get an exact *definition of the words* we make uſe of, that is, we muſt determine preciſely the ſenſe of our words, which is called the *definition of the name*.

Now a *definition of the name* being only a declaration in what ſenſe the word is uſed, or what idea or object we mean by it, this may be expreſſed by any one or more of the properties, effects, or circumſtances of that object which do ſufficiently diſtinguiſh it from other objects: As, if I were to tell what I mean by the word *air*, I may ſay, it is *that thin matter which we breathe in and breathe out continually*; or it is *that fluid body in which the birds fly a little above the earth*; or it is *that inviſible matter which fills all places near the earth, or which immediately encompaſſes the globe of earth and water*. So if I would tell what I mean by *light*, I would ſay it is *that medium whereby we ſee the colours and ſhapes of things*; or it is *that which diſtinguiſhes the day from the night*. If I were aſked what I mean by *religion*, I would anſwer, it is a *collection of all our duties to God*, if taken in a ſtrict and limited ſenſe; but, if taken in a large ſenſe, it is a *collection of all our duties both to God and man*. Theſe are called the *definitions of the name*.

Note, In defining the name there is no neceſſity that we ſhould be acquainted with the intimate eſſence or nature

of

of the thing; for any manner of *description* that will but sufficiently acquaint another person what we mean by such a word, is a sufficient *definition for the name*. And on this account a *synonymous* word, or a mere *negation of the contrary*, a *translation of the word* into another tongue, or a *grammatical explication* of it, is sometimes sufficient for this purpose; as if one would know what I mean by a *sphere*, I tell him it is *a globe*; if he ask what is a *triangle*, it is that *which has three angles*; or an *oval* is that which has the *shape of an egg*. *Dark* is that which has *no light*; *asthma* is a *difficulty of breathing*; a *diaphoretic* medicine, or a *sudorific*, is something that will *provoke sweating*; and an *insolvent*, is a man that *cannot pay his debts*.

Since it is the design of *Logic*, not only to assist us in *learning* but in *teaching* also, it is necessary that we should be furnished with some particular directions relating to the *definition of names*, both in *teaching* and *learning*.

SECT. III.

Directions concerning the Definition of Names.

Direct. I. *HAVE a care of making use of mere words, instead of ideas*, that is, such words as have no meaning, no definition belonging to them: *Do not always imagine that there are ideas wherever there are names*: For, though mankind hath so many millions of ideas more than they have names, yet so foolish and lavish are we, that too often we use some words in mere waste, and have *no ideas* for them; or, at least, our ideas are so exceedingly shattered and confused, broken and blended, various and unsettled, that they can signify nothing toward the improvement of the understanding. You will find a great deal of reason for this remark, if you read the *popish schoolmen*, or the *mystic divines*.

Never rest satisfied therefore with *mere words which have no ideas belonging to them*, or at least *no settled and determined ideas*. Deal not in such empty ware, whether you are a learner or a teacher; for hereby some persons have made themselves rich in words, and learned in their own esteem; whereas, in reality, their understandings have been poor, and they knew nothing.

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Let me give, for instance, some of those writers or talkers who deal much in the words *nature, fate, luck, chance, perfection, power, life, fortune, instinct*, &c. and that even in the most calm and instructive parts of their discourse; though neither they themselves nor their hearers have any settled meaning under those words; and thus they build up their reasonings, and infer what they please, with an ambition of the name of learning, or of sublime elevations in religion; whereas, in truth, they do but amuse themselves and their admirers with *swelling words of vanity, understanding neither what they say, nor whereof they affirm.* But this sort of talk was reproved of old by the two chief apostles, St. *Peter* and St. *Paul*, 1 Tim. i. 7. and 2 Pet. ii. 18.

When pretenders to philosophy or good sense grow fond of this sort of learning, they dazzle and confound their weaker hearers, but fall under the neglect of the wise. The *Epicureans* are guilty of this fault when they ascribe the formation of the world to *chance*: The *Aristotelians*, when they say, *Nature abhors a vacuum*: The *Stoicks*, when they talk of *fate*, which is superior to the gods: And the *gamesters*, when they curse their *ill-luck*, or hope for the favours of *fortune*. Whereas, if they would tell us, that, by the word *nature* they mean *the properties of any being*, or *the order of things established at the creation*; that by the word *fate* they intend the *decrees of God*, or the *necessary connection and influence of second causes and effects*; if by the word *luck* or *chance* they signify the *absolute negation of any determinate cause*, or only *their ignorance of any such cause*, we should know how to converse with them, and to assent to, or dissent from, their opinions. But, while they flutter in the dark, and make a noise with words which have no fixed ideas, they talk to the wind, and never can profit.

I would make this matter a little plainer still by instances borrowed from the *Peripatetick* philosophy, which was once taught in all the schools. The professor fancies he has assigned the true reason why all *heavy bodies tend downward*, why *amber will draw feathers or straws*, and the *loadstone draw iron*, when he tells you that this is done by certain *gravitating* and *attractive qualities*, which proceed from the *substantial forms* of those various bodies. He imagines that

that he has explained why the *loadstone's north-pole* * *shall repel the north end of a magnetic needle, and attract the south,* when he affirms, that this is done by its *sympathy* with one end of it, and its *antipathy* against the other end. Whereas, in truth, all these names of *sympathy, antipathy, substantial forms,* and *qualities,* when they are put for the causes of these effects in bodies, are but hard words, which only express a learned and pompous ignorance of the true cause of natural appearances; and in this sense they are *mere words without ideas.*

This will evidently appear, if one ask me, *Why a concave mirror or convex glass will burn wood* in the sun-beams, *or why a wedge will cleave it?* And I should tell him, it is by an *usterious quality* in the mirror or glass, and by a *cleaving power* in the wedge, arising from a certain unknown *substantial form* in them, whence they derive these *qualities*; or if he should ask me, Why a *clock strikes, and points to the hour?* and I should say, it is by an *indicating form* and *sonorific quality;* whereas I ought to tell him how the sun-beams are collected and united by a *burning-glass;* whence the mechanical force of a *wedge* is derived; and what are the *wheels* and *springs,* the *pointer,* and *hammar,* and *bell,* whereby a *clock* gives notice of the time, both to the eye and the ear. But these *usterious* and *cleaving powers, sonorious and indicating forms and qualities,* do either teach the inquirer nothing at all but what he knew before, or they are *mere words without ideas.*†

* *Note,* Some writers call that the *south pole* of a loadstone which attracts the *south end* of the needle; but I choose to follow those who call it the *north-pole.*

† It may be objected here, "And what does the modern philosopher, with all his detail of mathematical numbers, and diagrams, do more than this toward the solution of these difficulties? Does he not describe *gravity* by a certain *unknown force, whereby bodies tend downward to the center?* Hath he found the certain and mechanical reasons of *attraction, magnetism,* &c.?" I answer, That the moderns have found a thousand things by applying mathematics to natural philosophy, which the ancients were ignorant of; and, when they use any names of this kind, viz. *gravitation, attraction,* &c. they use them only to signify, that there are such effects and such causes, with a frequent confession of their ignorance of the

And there is many a man in the vulgar and in the learned world, who imagines himself deeply skilled in the *controversies of divinity*, whereas he has only furnished himself with a parcel of *scholastic* or *mystic* words, under some of which the authors themselves had no just ideas; and the learner, when he hears, or pronounces them, hath scarce any ideas at all. Such sort of words sometimes have become matters of immortal contention, as though the gospel could not stand without them; and yet the zealot perhaps knows little more of them than he does of *Shibboleth*, or *Higgaion*, *Selah*. Judges xii. 6. Psal. ix. 16.

Yet here I would lay down this *caution*, that there are several objects of which we have not a clear and distinct idea, much less an adequate or comprehensive one, and yet we cannot call the names of these things *words without ideas*; such are the *infinity* and *eternity* of God himself, the *union of our own soul and body*, the *union of the divine and human natures in Jesus Christ*, the *operation of the Holy Spirit on the mind of man*, &c. These ought not to be called *words without ideas*, for there is sufficient evidence for the reality and certainty of the existence of their objects; though there is some confusion in our clearest conceptions of them; and our ideas of them, though imperfect, are yet sufficient to converse about them, so far as we have need, and to determine so much as is necessary for our own faith and practice.

Direct. II. *Do not suppose that the natures or essences of things always differ from one another as much as their names do.* There are various purposes in human life, for which we put very different names on the same thing, or on things whose natures are near akin; and thereby oftentimes, by making a new *nominal species*, we are ready to deceive ourselves with the idea of another *real species of beings*: And those, whose understandings are led away by the mere sound of words, fancy the *nature* of those *things* to be very different whose names are so, and judge of them accordingly.

true springs of them: They do not pretend to make these words stand for the real causes of things, as though they thereby assigned the true philosophical solution of these difficulties; for in this sense they will still be words without ideas, whether in the mouth of an old philosopher or a new one.

I may borrow a remarkable instance for my purpose almost out of every garden which contains a variety of plants in it. Most or all plants agree in this, that they have a *root, a stalk, leaves, buds, blossoms*, and *seeds*: But the gardener ranges them under very different names, as though they were really different kinds of beings, merely because of the different use and service to which they are applied by men: As, for instance, those plants whose roots are eaten, shall appropriate the names of *roots* to themselves; such are *carrots, turnips, radishes*, &c. If the *leaves* are of chief use to us, then we call them *herbs*; as *sage, mint, thyme*. If the *leaves* are eaten raw, they are termed *sallad*; as *lettuce, purcelain*. If boiled, they become *pot-herbs*; as *spinnage, colworts*; and some of those same plants, which are *potherbs*, in one family, are sallad in another. If the buds are made our food, they are called *heads*, or *tops*; so *cabbage* heads, heads of *asparagus* and *artichoaks*. If the blossom be of most importance, we call it a *flower*; such are *daisies, tulips*, and *carnations*, which are the mere blossoms of those plants. If the *husk* or *seeds* are eaten, they are called the *fruits of the ground*, as *peas, beans, strawberries*, &c. If any part of the plant be of known and common use to us in *medicine*, we call it a *physical herb*, as *carduus, scurvy-grass*; but if we count no part useful, we call it a *weed*, and throw it out of the garden; and yet perhaps our next neighbour knows some valuable property and use of it; he plants it in his garden, and gives it the title of an *herb*, or a *flower*. You see here how small is the real distinction of these several *plants*, considered in their general nature as the *lesser vegetables*: Yet what very different ideas we vulgarly form concerning them, and make different *species* of them, chiefly because of the different names given them.

Now, when things are set in this clear light, it appears how ridiculous it would be for two persons to contend, whether *dandelion* be an *herb* or a *weed*; whether it be a *potherb* or *sallad*; when, by the custom or fancy of different families, this one plant obtains all these name according to the several uses of it, and the value that is put upon it.

Note here, That I find no manner of fault with the variety

riety of names which are given to several plants, according to the various uses we make of them. But I would not have our judgments imposed upon hereby, to think that these mere *nominal* species, namely, *herbs*, *sallad*, and *weeds*, become three *really* different species of beings, on this account, that they have different names and uses. But I proceed to other instances.

It has been the custom of mankind, when they have been angry with any thing, to add a *new ill name* to it, that they may convey thereby a hateful idea of it, though the nature of the thing still abides the same. So the Papists call the Protestants *Heretics*; a profane person calls a man of piety a *Precisian*; and in the times of the civil war, in the last century, the Royalists called the Parliamentarians *Fanatic*, *Roundheads*, and *Sectaries*. And they in requital called the Royalists *Malignants*: But the partizans on each side were really neither better nor worse for these names.

It has also been a frequent practice, on the other hand, to put *new favourable names* upon *ill ideas*, on purpose to take off the odium of them. But, notwithstanding all these flattering names and titles, a man of profuse generosity is but a *spendthrift*; a natural son is a *bastard* still; a gallant is an *adulterer*; and a lady of pleasure is a *whore*.

Direct. III. *Take heed of believing the nature and essence of two or more things to be certainly the same, because they may have the same name given them.* This has been an unhappy and fatal occasion of a thousand mistakes in the natural, in the civil, and in the religious affairs of life, both amongst the vulgar and the learned. I shall give two or three instances, chiefly in the matters of *natural philosophy*, having hinted several dangers of this kind relating to *theology* in the foregoing discourse concerning *equivocal words*.

Our elder philosophers have generally made use of the word SOUL to signify that principle whereby a plant grows, and they call it the *vegetative soul*: The principle of the animal motion of a brute has been likewise called a *soul*, and we have been taught to name it the *sensitive soul*; they have also given the name *soul* to that superior principle in man, whereby he thinks, judges, reasons, &c. and, though they distinguished this by the honourable title of

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the *rational soul*, yet, in common discourse and writing, we leave out the words *vegetative*, *sensitive*, and *rational*, and make the word *soul* serve for all these principles: Thence we are led early into this imagination, that *there is a sort of spiritual being in plants and in brutes, like that in men.* Whereas, if we did but abstract and separate these things from words, and compare the cause of *growth* in a *plant*, with the cause of *reasoning* in *man*, (without the word *soul*) we should never think that these two principles were at all like one another; nor should we perhaps so easily and peremptorily conclude that *brutes* need an intelligent mind to perform their animal actions.

Another instance may be the word LIFE, which being attributed to *plants*, to *brutes*, and to *men*, and in each of them ascribed to the *soul*, has very easily betrayed us from our infancy into this mistake, *that the spirit or mind, or thinking principle, in man, is the spring of vegetative and animal life to his body*: Whereas, it is evident, that if the spirit or thinking principle of man gave *life* to his animal nature, the way to save men from dying would not be to use medicines, but to persuade the spirit to abide in the body.

I might derive a third instance from the word HEAT, which is used to signify the *sensation we have* when we are near the fire, as well as the *cause of that sensation*, which is in the fire itself; and thence we conclude from our infancy, that *there is a sort of heat in the fire resembling our own sensation, or the heat which we feel:* Whereas, in the fire, there is nothing but little particles of matter, of such particular shapes, sizes, situations and motions, as are fitted to impress such motion on our flesh or nerves as excite the sense of *heat*. Now if this cause of our sensation in the fire had been always called by a distinct name, perhaps we had not been so rooted in this mistake, that *the fire is hot with the same sort of heat that we feel.* This will appear with more evidence when we consider, that we are secure from the same mistake where there have been two different names allotted to our *sensation*, and to the *cause of it*; as, we do not say, *pain is in the fire* that burns us, or *in the knife* that cuts and wounds us; for we call it *burning in the fire, cutting in the knife*, and *pain* only when it is in *ourselves*.

Numerous instances of this kind might be derived from the words *sweet, sour, loud, shrill,* and almost all the *sensible qualities,* whose real natures we mistake from our very infancy, and we are ready to suppose them to be the same in us, and in the bodies that cause them; partly, because the words which signify our own sensations are applied also to signify those unknown shapes and motions of the little corpuscles which excite and cause those sensations.

Direct. IV. *In conversation or reading, be diligent to find out the true sense, or distinct idea, which the speaker or writer affixes to his words, and especially to those words which are the chief subject of his discourse.* As far as possible take heed lest you put more or fewer ideas into one word than the person did when he wrote or spoke; and endeavour that your ideas of every word may be the same as his were: Then you will judge better of what he speaks or writes.

It is for want of this that men quarrel in the dark; and that there are so many contentions in the several sciences, and especially in *divinity.* Multitudes of them arise from a mistake of the true sense or complete meaning in which words are used by the writer or speaker; and hereby sometimes *they seem to agree, when they really differ* in their sentiments; and sometimes *they seem to differ when they really agree.* Let me give an instance of both.

When one man by the word *church* shall understand *all that believe in Christ;* and another by the word *church* means only the *church of Rome:* they may both assent to this proposition, *There is no salvation out of the church,* and yet their inward sentiments may be widely different.

Again, if one writer shall affirm that *virtue added to faith is sufficient to make a Christian,* and another shall as zealously deny this proposition, they seem to differ widely in words, and yet perhaps they may both really agree in sentiment: If, by the word *virtue,* the affirmer intends our *whole duty to God and man;* and the denier by the word *virtue* means only courage, or at most our *duty toward our neighbour,* without including in the idea of it the *duty which we owe to God.*

Many such sort of contentions, as these are, traced to their original, will be found to be mere *logomachies,* or strifes and quarrels about *names* and *words,* and *vain janglings*

lings, as the apostle calls them in his first letter of advice to *Timothy*.

In order therefore to attain *clear and distinct ideas* of what we read and hear, we must search the *sense of words*; we must consider what is their original and derivation in our own or foreign languages; what is their common sense among mankind, or in other authors, especially such as wrote in the same country, in the same age, about the same time, and upon the same subjects: We must consider in what sense the same author uses any particular *word* or *phrase*, and that when he is discoursing on the same matter, and especially about the same parts or paragraphs of his writing: We must consider whether the word be used in a strict or limited, or in a large and general sense; whether in a literal, in a figurative, or in a prophetic sense; whether it has any secondary idea annexed to it, besides the primary or chief sense. We must inquire farther what is the scope and design of the writer; and what is the connection of that sentence with those that go before it, and those which follow it. By these and other methods we are to search out the *definition of names*, that is the true sense and meaning in which any author or speaker uses any word, which may be the chief subject of discourse, or may carry any considerable importance in it.

Direct. V. *When we communicate our notions to others, merely with a design to inform and improve their knowledge, let us in the beginning of our discourse take care to adjust the definition of names wheresoever there is need of it*; that is, to determine plainly what we mean by the chief words which are the subject of our discourse; and be sure always to keep the same ideas, whensoever we use the same words, unless we give due notice of the change. This will have a very large and happy influence, in securing not only others but ourselves too from confusion and mistake; for even writers and speakers themselves, for want of due watchfulness, are ready to affix *different ideas to their own words*, in different parts of their discourses, and hereby bring perplexity into their own reasonings, and confound their hearers.

It is by an observation of this rule that *mathematicians* have so happily secured themselves, and the *sciences* which they

they have profeſſed, from wrangling and controverſy; becauſe whenſoever, in the progreſs of their treatiſes, they have occaſion to uſe a new and unknown word, they always *define* it, and tell in what ſenſe they ſhall take it; and in many of their writings you find a heap of *definitions* at the very beginning. Now, if the writers of *natural philoſophy* and *morality* had uſed the ſame accuracy and care, they had effectually ſecluded a multitude of noiſy and fruitleſs debates out of their own ſeveral provinces: Nor had that ſacred theme of *divinity* been perplexed with ſo many intricate diſputes, nor the church of *Chriſt* been torn to pieces by ſo many ſects and factions, if the words *grace*, *faith*, *righteouſneſs*, *repentance*, *juſtification*, *worſhip*, *church*, *biſhop*, *preſbyter*, &c. had been well defined, and their ſignifications adjuſted, as near as poſſible, by the uſe of thoſe words in the New Teſtament; or at leaſt, if every writer had told us at firſt in what ſenſe he would uſe thoſe words.

Direct. VI. *In your own ſtudies, as well as in the communication of your thoughts to others merely for their information, avoid ambiguous and equivocal terms as much as poſſible.* Do not uſe ſuch words as have two or three *definitions of the name* belonging to them, that is, ſuch words as have two or three ſenſes, where there is any danger of miſtake. Where your chief buſineſs is to inform the judgment, and to explain a matter rather than to perſuade or affect, be not fond of expreſſing yourſelves in *figurative* language, when there are any proper words that ſignify the ſame idea in their *literal* ſenſe. It is the *ambiguity of names*, as we have often ſaid, that brings almoſt infinite confuſion into our *conceptions of things*.

But where there is a neceſſity of uſing an ambiguous word, there let double care be uſed in defining that word, and declaring in what ſenſe you take it. And be ſure to ſuffer no ambiguous word ever to come into your definitions.

Direct. VII. *In communicating your notions, uſe every word as near as poſſible in the ſame in which mankind commonly uſe it, or which writers that have gone before you have uſually affixed to it, upon condition that it is free from ambiguity.* Though names are in their original merely arbitrary, yet we ſhould always keep to the eſtabliſhed meaning of them, unleſs great

great neceſſity requires the alteration; for, when any word has been uſed to ſignify an idea, that old idea will recur in the mind when the word is heard or read, rather than any new idea which we may faſten to it. And this is one reaſon why the *received definition of names* ſhould be changed as little as poſſible.

But I add farther, that, though a word intirely new introduced into a language may be affixed to what idea you pleaſe, yet an old word ought never to be fixed to an unaccuſtomed idea, without juſt and evident neceſſity, or without preſent or previous notice, leſt we introduce thereby a licence for all manner of pernicious *equivocations* and *falſhoods*; as for inſtance, when an idle boy, who has not ſeen his book all the morning, ſhall tell his maſter that *he has learned his leſſon*, he can never excuſe himſelf by ſaying, that by the word *leſſon* he meant his *breakfaſt*, and by the word *learnt* he meant *eating*; ſurely this would be conſtrued a downright lie, and his fancied wit would hardly procure him a pardon.

In uſing an ambiguous word, which has been uſed in different ſenſes, we may chooſe what we think the moſt proper ſenſe, as I have done, *p.* 73. in naming the *poles of the loadſtone*, north *or* ſouth.

And, when a word has been uſed in two or three ſenſes, and has made a great inroad for error upon that account, it is of good ſervice to drop one or two of thoſe ſenſes, and leave it only one remaining, and affix the other ſenſes or ideas to other words. So the modern philoſophers, when they treat of the *human ſoul*, they call it the *mind*, or *mens humana*, and leave the word *anima*, or *ſoul*, to ſignify the *principle of life and motion in mere animal beings*.

The poet *Juvenal* has long ago given us a hint of this accuracy and diſtinction, when he ſays of *brutes* and *men*,

Indulſit mundi communis conditor illis
Tantam animas; *nobis* animum *quoque*.
Sat. ix. v. 134.

Exception. There is one caſe, wherein ſome of theſe laſt rules concerning *the definition of words* may be in ſome meaſure diſpenſed with; and that is, when ſtrong and rooted prejudice hath eſtabliſhed ſome favourite word or phraſe, and long uſed it to expreſs ſome miſtaken notion,

or to unite ſome inconſiſtent ideas; for then it is ſometimes much eaſier to lead the world into truth, by indulging their fondneſs for a phraſe, and by aſſigning and applying new ideas and notions to their favourite word; and this is much ſafer alſo than to awaken all their paſſions by rejecting both their old words, and phraſes, and notions, and introducing all new at once: Therefore we continue to ſay, *there is heat in the fire, there is coldneſs in ice*, rather than invent new words to expreſs the powers which are in *fire* or *ice*, to excite the ſenſations of *heat* or *cold* in us. For the ſame reaſon, ſome words, and phraſes, which are leſs proper, may be continued in *theology*, while people are led into clearer ideas with much more eaſe and ſucceſs, than if an attempt was made to change all their beloved forms of ſpeech.

In other caſes, theſe *logical directions* ſhould generally be obſerved, and different names affixed to different ideas.

Here I cannot but take occaſion to remark, that it is a conſiderable advantage to any language to have a *variety of new words* introduced into it, that when, in courſe of time, *new objects* and *new ideas* ariſe, there may be *new words* and names aſſigned to them: And alſo, where one ſingle name has ſuſtained two or three ideas in time paſt, theſe new words may remove the ambiguity by being affixed to ſome of thoſe ideas. This practice would, by degrees, take away part of the uncertainty of language. And for this reaſon I cannot but congratulate our Engliſh tongue, that it has been abundantly enriched with the tranſlation of words from all our neighbour nations, as well as from ancient languages, and theſe words have been as it were infranchiſed amongſt us; for French, Latin, Greek, and German names, will ſignify Engliſh ideas, as well as words that are anciently and intirely Engliſh.

It may not be amiſs to mention in this place, that, as the determination of the particular ſenſe in which any word is uſed is called the *definition of the name*, ſo the enumeration of the various ſenſes of an equivocal word is ſometimes called the *diviſion* or *diſtinction* of the name; and for this purpoſe good dictionaries are of excellent uſe.

This *diſtinction* of the *name* or *word* is greatly neceſſary in

in argumentation or dispute; when a fallacious argument is used, he that answers it distinguishes the several senses of some word or phrase in it, and shews in what sense it is *true*, and in what sense it is evidently *false*.

SECT. IV.

Of the Definition of Things.

AS there is much confusion introduced into our ideas, by the means of those *words* to which they are affixed, so the *mingling our ideas* with each other without caution, is a farther occasion whereby they become confused. A *court lady*, born and bred up amongst *pomp* and *equipage*, and the vain notions of *birth* and *quality*, constantly joins and mixes all these with the idea of herself, and she imagines these to be *essential to her nature*, and as it were, *necessary to her being*; thence she is tempted to look upon *menial servants*, and the lowest rank of mankind, *as another species of beings*, quite distinct from herself. A *plow-boy*, that has never travelled beyond his own village, and has seen nothing but *thatched houses* and his *parish church*, is naturally led to imagine that *thatch* belongs to the very nature of a *house*, and that that must be a *church* which is built of *stone*, and especially if it has a *spire* upon it. A *child* whose *uncle* has been excessive fond, and his *schoolmaster* very severe, easily believes that *fondness* always belongs to *uncles*, and that severity is essential to *masters* or *instructors*. He has seen also *soldiers* with *red coats*, or *ministers* with *long black gowns*, and therefore he persuades himself that these garbs are essential to those characters, and that he is not a *minister* who has not *a long black gown*, nor can he be a *soldier* who is not dressed in *red*. It would be well if all such mistakes ended with childhood.

It might be also subjoined, that our complex ideas become confused, not only by *uniting* or *blending together more simple or single ideas* than really belong to them, as in the instances just mentioned; but obscurity and confusion sometimes come upon our ideas also, *for want of uniting a sufficient number of single ideas* to make the complex one: So if I conceive of a *leopard* only as a *spotted beast*, this does

not

not diſtinguiſh it from a *tyger* or a *lynx*, nor from many *dogs* or *horſes*, which are ſpotted too; and therefore a *leopard* muſt have ſome more ideas added to complete and diſtinguiſh it.

I grant that it is a large and free acquaintance with the world, a watchful obſervation and diligent ſearch into the nature of things, that muſt fully correct this kind of errors: The *rules of logic* are not ſufficient to do it: But yet the *rules of logic* may inſtruct us by what means to diſtinguiſh one thing from another, and how to ſearch and mark out, as far as may be, the contents and limits of the nature of diſtinct beings, and thus may give us great aſſiſtance towards the remedy of theſe miſtakes.

As the *definition of names* frees us from that confuſion which *words* introduce, ſo the *definition of things* will in ſome meaſure guard us againſt that confuſion which *mingled ideas* have introduced: For, as a *definition of the name* explains what any word means, ſo a *definition of the thing* explains what is the nature of that thing.

In order to form a *definition* of any thing, we muſt put forth theſe three acts of the mind.

Firſt, compare the thing to be defined with other things that are moſt like to itſelf, and ſee wherein its eſſence or nature agrees with them; and this is called the *general nature* or *genus* in a definition: So if you would define what *wine* is, firſt compare it with other things like itſelf, as *cyder*, *perry*, &c. and you will find it agrees eſſentially with them in this, that it is a *ſort of juice*.

Secondly, Conſider the moſt remarkable and primary attribute, property, or idea wherein this thing differs from thoſe other things that are moſt like it; and that is its *eſſential* or *ſpecific difference*: So *wine* differs from *cyder* and *perry*, and all other *juices*, in that it is *preſſed from a grape*. This may be called its *ſpecial nature*, which diſtinguiſhes it from other *juices*.

Thirdly, Join the general and ſpecial nature together, or (which is all one) the *genus* and the *difference*, and theſe make up a *definition*. So the *juice of a grape*, or *juice preſſed from grapes*, is the *definition of wine*.

So, if I would define what *winter* is, I conſider firſt wherein it agrees with other things which are moſt like it, namely,

namely, *summer*, *spring*, *autumn*, and I find they are all *seasons of the year*; therefore a *season of the year is the genus*. Then I observe wherein it differs from these, and that is in the *shortness of the days*; for it is this which does primarily distinguish it from other *seasons*; therefore this may be called its *special nature*, or its *difference*. Then, by joining these together, I make a *definition*. *Winter is that season of the year wherein the days are shortest*. I confess indeed this is but a ruder definition of it, for to define it as an accurate astronomer, I must limit the days, hours, and minutes.

After the same manner, if we would explain or define what the *picture of man is*, we consider first the *genus*, or *general nature* of it, which is a *representation*; and herein it agrees with many other things, as a *statue*, a *shadow*, a *print*, a *verbal description* of a man, &c. Then we consider wherein it differs from these, and we find it differs from a verbal description, in that it is a representation to the eye and not to the ear: It differs from a *statue*, in that it is a representation upon a flat surface, and not in a solid figure: It differs from a *shadow*, in that it is an abiding representation, and not a fleeting one: It differs from a *print* or *draught*, because it represents the colours by paint, as well as the shape of the object by delineation. Now, so many, or rather so few of these ideas put together, as are just sufficient to distinguish *a picture* from all other representations, make up its essential difference, or its *special nature*; and all these are included in its *being painted on a plain surface*. Then join this to the *genus*, which is a *representation*; and thus you have the complete *definition* of the *picture* of a *man*, namely, it is *the representation of a man in paint upon a surface (or a plane)*.

Here it must be observed, that when we speak of the *genus* and *difference* as composing a *definition*, it must always be understood that the *nearest genus*, and the *specific difference*, are required.

The next *general nature*, or the *nearest genus*, must be used in a definition, because it includes all the rest as parts of its complex idea; as if I would define *wine*, I must say, *wine is a juice*, which is the nearest genus; and not say, *wine is a liquid*, which is a remote general nature;

or, *wine is a substance*, which is yet more remote; for *juice* includes both *substance* and *liquid*. Besides, neither of these two remote general natures would make any distinction between *wine*, and a thousand other *substances*, or other *liquids*, a *remote genus* leaves the thing too much undistinguished.

The *specific difference* is that primary attribute which distinguishes each species from one another, while they stand ranked under the same general nature or genus. Though *wine* differs from other liquids, in that it is the *juice of a certain fruit*, yet this is but a *general* or *generic difference*, for it does not distinguish *wine* from *cyder* or *perry*; the *specific difference of wine* therefore is its *pressure from the grape*; as *cyder* is pressed from *apples*, and *perry* from *pears*.

In definitions also, we must use the *primary attribute* that distinguishes the *species* or special nature, and not attempt to define *wine* by its peculiar tastes, or effects, or other properties, which are but *secondary* or *consequential*, when its *pressure from the grape* is the most obvious and primary distinction of it from all other juices. I confess in some cases it is not so easily known which is the primary idea that distinguishes one thing from another; and therefore some would as soon define *winter* by the *coldness of the season*, as by the *shortness of the days*; though the *shortness of the days* is doubtless the most just, primary, and philosophical difference betwixt that and the other seasons of the year, since winter days are always *shortest*, but not always the *coldest*; I add also, that the *shortness of the days* is one cause of the *coldness*, but the *cold* is no cause of their *shortness*.

SECT. V.

Rules of Definition of the Thing.

THE *special rules of a good definition* are the following:

Rule I. *A definition must be universal*, or, as some call it, *adequate*; that is, it must agree to all the particular species or individuals that are included under the same idea; so the *juice of a grape* agrees to all proper *wines*, whether *red*, *white*, *French*, *Spanish*, *Florence*, &c.

Rule II. *It must be proper and peculiar to the thing defined, and*

and agree to that alone; for it is the very design of a definition effectually to distinguish one thing from all others: So the *juice of a grape* agrees to no other substance, to no other liquid, to no other being but *wine*.

These two *rules* being observed, will always render a definition *reciprocal with the things defined;* which is a scholastic way of speaking, to signify that the definition may be used in any sentence in the place of the thing defined, or they may be mutually affirmed concerning each other, or substituted in the room of each other. *The juice of the grape is wine*, or *wine is the juice of the grape*. And whereſoever the word *wine* is used, you may put the *juice of the grape* instead of it, except when you consider *wine* rather as a *word* than a thing, or when it is mentioned in such *logical rules*.

Rule III. *A definition ought to be clear and plain;* for the design of it is to lead us into the knowledge of the thing defined.

Hence it will follow, that the words used in a definition ought not to be *doubtful*, or *equivocal* and *obscure*, but as plain and easy as the language will afford: And indeed it is a general rule concerning the definition both of *names* and *things*, that no word should be used in either of them which has any darkness or difficulty in it, unless it has been before explained or defined.

Hence it will follow also, that there are many things which cannot well be defined, either as to the *name* or the *thing*, unless it be by synonymous words, or by a negation of the contrary idea, *&c.* for learned men know not how to make them more evident, or more intelligible, than the ideas which every man has gained by the vulgar methods of teaching. Such are the ideas of *extension*, *duration*, *consciousness*, and most of our *simple* ideas, and particularly *sensible* qualities, as *white*, *blue*, *red*, *cold*, *heat*, *shrill*, *bitter*, *sour*, &c.

We can say of *duration*, that it is a *continuance in being*, or a *not ceasing to be;* we can say of *consciousness*, that it is *as it were a feeling within ourselves;* we may say, *heat* is that which is *not cold;* or *sour* is that which is *like vinegar;* or we may point to the clear sky, and say, that is *blue*. These are vulgar methods of teaching the *definitions of names*,

names, or meaning of words. But there are some philosophers, whose attempts to define these things learnedly have wrapt up their ideas in greater darkness, and exposed themselves to ridicule and contempt; as when they define *heat*, they say, it is *Qualitas congregans homogenea, & segregans heterogenea;* that is, a quality gathering together things of the same kind, and separating things of a different kind. So they define *white, a colour arising from the prevalence of brightness:* But every child knows *hot* and *white* better without these definitions.

There are many other definitions given by the Peripatetic philosophers, which are very faulty, by reason of their *obscurity;* as *motion* is defined by them *the act of a being in power, so far forth as it is in power. Time is the measure or number of motion according to past, present, and future.* The *soul* is the *act of an organical natural body, having life in power;* and several others of the same stamp.

Rule IV. It is also commonly prescribed amongst the rules of definition, *that it should be short*, so that it *must have no tautology in it, nor any words superfluous.* I confess definitions ought to be expressed in as few words as is consistent with a clear and just explication of the nature of the thing defined; and a distinction of it from all other things beside: But it is of much more importance, and far better, that a definition should explain *clearly* the subject we treat of, though the words be *many*, than to leave obscurities in the sentence by confining it within too narrow limits. So in the definition which we have given of *logic*, that it is the *art of using reason well in the search after truth, and the communication of it to others*, it has indeed many words in it, but it could not be well shorter. *Art* is the *genus* wherein it agrees with *rhetoric, poesy, arithmetic, wrestling, sailing, building*, &c. for all these are *arts* also: But the difference or special nature of it is drawn from its object, *reason;* from the act *using it well*, and from its two great ends or designs, namely, the *search after truth*, and the *communication of it*; nor can it be justly described and explained in fewer ideas.

V. If we add a *fifth rule*, it must be, that *neither the thing defined, nor a mere synonymous name, should make a part of the definition*, for this would be no explication of *the nature of*

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the thing; and a synonymous word at best could only be a *definition of the name.*

SECT. VI.

Observations concerning the Definition of Things.

BEFORE I part with this subject, I must propose several *observations* which relate to the definition of things.

1*st Observat.* There is no need that, in *definitions*, we should be confined to *one single attribute or property*, in order to express the difference of the thing defined, for sometimes the *essential* difference consists in *two* or *three* ideas or attributes. So a *grocer* is a *man who buys and sells sugar, and plumbs, and spices for gain.* A *clock* is an *engine with weights and wheels, that shows the hour of the day both by pointing and striking*: And if I were to define a *repeating clock*, I must add another property, namely, that it also *repeats the hour.* So that the true and primary essential difference of some complex ideas consisting in several distinct properties, cannot be well expressed without conjunctive particles of speech.

2*d Observat.* There is no need that *definitions* should always be *positive*, for some things differ from others merely by a defect of what others have; as, if a *chair* be defined *a seat for a single person with a back belonging to it*, then a *stool* is a *seat for a single person without a back*; and a *form* is a *seat for several persons without a back:* These are *negative* differences. So *sin is want of conformity to the law of God; blindness is a want of sight;* a *vagabond* is a *person without a home.* Some ideas are *negative*, and their definitions ought to be so too.

3*d Observat.* Some things may have two or more *definitions*, and each of them equally just and good; as a *mile* is the *length of eight furlongs*, or it is the *third part of a league. Eternal* is *that which ever was, and ever shall be;* or it is *that which had no beginning, and shall have no end. Man* * is usually defined a *rational animal*: But it may be

* The common definition of man, namely, a *rational animal*, is very faulty. 1. Because the *animal* is not *rational*;

much better to define him a *ſpirit united to an animal of ſuch a ſhape*, or an *animal of ſuch a peculiar ſhape united to a ſpirit*, or a *being compoſed of ſuch an animal and a mind*.

4th Obſervat. Where the *eſſences* of things are evident, and clearly diſtinct from each other, there we may be more accurate and exact in the *definitions* of them: But, where their *eſſences* approach near to each other, the *definition* is more difficult. A *bird* may be defined a *feathered animal with wings*, a *ſhip* may be defined a *large hollow building made to paſs over the ſea with ſails*: But, if you aſk me to define a *bat*, which is between a *bird* and a *beaſt*, or to define a *barge* and *hoy*, which are between a *boat* and a *ſhip*, it is much harder to define them, or to adjuſt the bounds of their eſſence. This is very evident in all *monſtrous births*, and *irregular productions of nature*, as well as in many *works of art*, which partake ſo much of *one ſpecies*, and ſo much of *another*, that we cannot tell under which *ſpecies* to rank them, or how to determine their *ſpecific difference*.

The ſeveral *ſpecies* of beings are ſeldom preciſely limited in the nature of things by an uncertain and unalterable bounds: The eſſences of many things do not conſiſt *in indiviſibili*, or in one evident indiviſible point, as ſome have imagined; but by various degrees they approach nearer to, or differ more from, others that are of a kindred nature. So (as I have hinted before) in the very middle of each of the arches of a rainbow, the colours of *green*, *yellow*, and *red*, are ſufficiently diſtinguiſhed; but near the borders of the ſeveral arches they run into one another, ſo that you hardly know how to limit the colours, nor whether to call it *red* or *yellow*, *green* or *blue*.

5th Obſervat. As the *higheſt* or chief *genuſes*, namely, *being* and *not being*, can never be defined, becauſe there is no

the rationality of man ariſes from the mind to which the animal is united. 2. Becauſe if a ſpirit ſhould be united to a *horſe*, and make it a rational being, ſurely this would not be a *man*: It is evident therefore that the *peculiar ſhape* muſt enter into the definition of a *man* to render it juſt and perfect; and, for want of a full deſcription thereof, all our definitions are defective.

no *genus* superior to them; so neither can *singular ideas* or *individuals* be well defined, because either they have no *essential differences* from other individuals, or their differences are not known; and therefore *individuals* are only to be described by their particular circumstances: So King *George* is distinguished from all other men and other kings, by describing him as *the first king of Great Britain of the house of Brunswick*; and *Westminster Hall* is described by its situation and its use, *&c.*

That individual bodies can hardly have any essential difference, at least within the reach of our knowledge, may be made thus to appear: *Methuselah*, when he was nine hundred and sixty years *old*, and perhaps worn out with age and weakness, was the same person as when he was in his full vigour of *manhood*, or when he was an *infant*, newly born; but how far was his body the same? Who can tell whether there was any fibre of his flesh or his bones that continued the same throughout his whole life? Or who can determine which were those fibres? The *ship* in which Sir *Francis Drake* sailed round the world might be new built, and refitted so often, that few of the same timbers remained; and who can say whether it must be called the same ship or no? And what is its essential difference? How shall we define Sir *Francis Drake's* ship, or make a definition for *Methuselah*?

To this head belongs that most difficult question, *What is the principle of individuation?* Or what is it that makes any one thing *the same* as it was some time before? This is too large and laborious an inquiry to dwell upon in this place: Yet I cannot forbear to mention this hint, namely, Since our own bodies must rise at the last day for us to receive rewards or punishments in them, there may be perhaps some *original fibres* of each human body, some *stamina vitæ*, or primeval *seed of life*, which may remain unchanged through all the stages of life, death, and the grave; these may become the springs and principles of a resurrection, and sufficient to denominate it that *same body*. But, if there be any such constant and vital atoms which distinguish every human body, they are known to God only.

6th Observat. Where we cannot find out the *essence* or *essential*

essential difference of any *species* or *kind* of beings that we would define, we must content ourselves with a collection of such *chief parts* or *properties* of it as may best explain it, so far as it is known, and best distinguish it from other things: So a *marigold* is a *flower which hath many long yellow leaves, round a little knot of seeds in the midst, with such a peculiar stalk*, &c. So if we would define *silver*, we say it is a *white and hard metal, next in weight to gold*: If we would define an *elder-tree*, we might say it is *one among the lesser trees, whose younger branches are soft and full of pith, whose leaves are jagged or indented, and of such a particular shape, and it bears large clusters of small black berries*: So we must define *water*, *earth*, *stone*, a *lion*, an *eagle*, a *serpent*, and the greatest part of *natural* beings, by a collection of those properties, which according to our observation distinguish them from all other things. This is what Mr. *Locke* calls *nominal essences*, and *nominal definitions*. And indeed, since the *essential differences* of the various natural beings or bodies round about us arise from a peculiar shape, size, motion, and situation of the small particles of which they are composed, and since we have no sufficient method to inform us what these are, we must be contented with such a *sort of* definition of the bodies they compose.

Here *note*, That this sort of definition, which is made up of a mere collection of the most remarkable parts or properties, is called an *imperfect definition*, or a *description*; whereas the *definition* is called *perfect* when it is composed of the essential *difference*, added to the general nature or *genus*.

7*th Observat.* The *perfect definition of any being* always includes the *definition of the name* whereby it is called, for it informs us of the sense or meaning of that word, and shews us what idea that word is affixed to: But the *definition of the name* does by no means include a *perfect definition of the thing*; for, as we have said before, a mere synonymous word, a negation of the contrary, or the mention of any one or two distinguishing properties of the thing, may be a sufficient *definition of the name*. Yet in those cases where the essential difference or essence of a thing is unknown, there a *definition of the name*, by the chief properties, and a *description of the thing*, are much the same.

And

And here I think it necessary to take notice of one general sentiment, that seems to run through that excellent performance, Mr. *Locke's Essay on human Understanding*, and that is, "That the *essences of things* are utterly unknown to us, and therefore all our pretences to distinguish the essences of things can reach no farther than *mere nominal essences*; or a collection of such properties as we know; to some of which we affix particular names, and others we bundle up, several together, under one name: And that all our attempts to rank beings into different kinds of species can reach no farther than to make *mere nominal species*; and therefore our definitions of things are but *mere nominal descriptions* or definitions of the name."

Now, that we may do justice to that great author, we ought to consider that he confines this sort of discourse only to the *essence of simple ideas*, and to the *essence of substances*, as appears evident in the fourth and sixth chapters of his third book; for he allows the *names of mixed modes always to signify the real essences of their species*, Chap. V. and he acknowledges *artificial things to have real distinct species*; and that, in the distinction of their essences, *there is generally less confusion and uncertainty than in natural*, Chap. VI. sect. 40, 41. though it must be confessed that he scarce makes any distinction between the *definition of the name* and the *definition of the thing*, as Chap. IV. and sometimes the current of his discourse decries the *knowledge of essences* in such general terms as may justly give occasion to mistake.

It must be granted, that the *essence* of most of our *simple ideas*, and the greatest part of particular *natural substances* are much unknown to us; and therefore the essential difference of different qualities, and of the various kinds of bodies, (as I have said before) lie beyond the reach of our understandings: We know not what makes the primary real inward distinctions between *red, green, sweet, sour*, &c. between *wood, iron, oil, stone, fire, water, flesh, clay*, in their general natures; nor do we know what are the inward and prime distinctions between all the particular kinds or species in the *vegetable animal, mineral, metallic*, or *liquid* world of things. See *Philosophical Essays*, Essay xi. sect. 1.

But still there is a very large field for the knowledge of the *essences* of things, and for the use of *perfect definitions* amongst

amongſt our *complex ideas*, the *modal appearances and changes of nature*, the *works of art*, the *matters of ſcience*, and all the affairs of the *civil*, the *moral*, and the *religious life*: And indeed it is of much more importance to all mankind, to have a better acquaintance with the *works of art* for their own livelihood and daily uſe, with the *affairs of* morality for their behaviour in this world, and with the *matters of religion*, that they may be prepared for the world to come, than to be able to give a perfect definition of the works of nature.

If the particular eſſences of natural bodies are unknown to us, we may be yet good philoſophers, good artiſts, good neighbours, good ſubjects, and good Chriſtians, without that knowledge; and we have juſt reaſon to be content.

Now that the eſſences of ſome of the *modal appearances* and *changes in nature*, as well as *things of art*, *ſcience*, and *morality*, are ſufficiently known to us to make *perfect definitions* of them, will appear by the ſpecimen of a few definitions of theſe things.

Motion is a change of a place. *Swiftneſs* is the paſſing over a long ſpace in a ſhort time. A *natural day* is the time of one alternate revolution of light and darkneſs, or it is the duration of twenty-four hours. An *eclipſe of the ſun* is a defect in the ſun's tranſmiſſion of light to us by the moon interpoſing. * *Snow* is congealed vapour. * *Hail* is congealed rain. An * *iſland* is a piece of land riſing above the ſurrounding water. An * *hill* is an elevated part of the earth, and a * *grove* is a piece of ground thick ſet with trees. An *houſe* is a building made to dwell in. A *cottage* is a mean houſe in the country. A *ſupper* is that meal which we make in the evening. A *triangle* is a figure compoſed of three ſides. A *gallon* is a meaſure containing eight pints. A *porter* is a man who carries burdens

* Note, *Iſland*, *hill*, *grove*, are not deſigned here in their more *remote and ſubſtantial natures*, (if I may ſo expreſs it) or as the matter of them is *earth*: for in this ſenſe we know not their eſſence, but only as conſidered in their *modal appearances* whereby one *part of earth* is diſtinguiſhed from another. The ſame may be ſaid of *ſnow*, *hail*, &c.

dens for hire. A *king* is the chief ruler in a kingdom. *Veracity* is the conformity of our words to our thoughts. *Covetousness* is an excessive love of money, or other possessions. *Killing* is the taking away the life of an animal. *Murder* is the unlawful killing of a man. *Rhetoric* is the art of speaking in a manner fit to persuade. *Natural philosophy* is the knowledge of the properties of bodies, and the various effects of them, or it is the knowledge of the various appearances in nature, and their causes; and *Logic* is the art of using our reason well, &c.

Thus you see the essential differences of various beings may be known, and are borrowed from their *qualities* and *properties*, their *causes*, *effects*, *objects*, *adjunct ends*, &c. and indeed, as infinitely various as the *essences* of things are, their *definitions* must needs have various forms.

After all, it must be confessed, that many logicians and philosophers in the former ages have made too great a bustle about the exactness of their definitions of things, and entered into long fruitless controversies, and very ridiculous debates in the several sciences, about adjusting the *logical formalities* of every definition; whereas that sort of wrangling is now grown very justly contemptible, since it is agreed that true learning and the knowledge of things depends much more upon a large acquaintance with their various properties, causes, effects, subject, object, ends and designs, than it does upon the formal and scholastic niceties of *genus* and *difference*.

SECT. VII.

Of a Complete Conception of Things.

HAVING dwelt so long upon the first *rule* to direct our conceptions, and given an account of the *definition* both of *names* and *things*, in order to gain *clear* and *distinct ideas*, we make haste now to the *second rule*, to guide our conceptions, and that is, *Conceive of things completely in all their parts*.

All *parts* have a reference to some *whole*: Now there is an old distinction which logical writers make of a *whole*

and

and its *parts* into four ſeveral kinds, and it may be proper juſt to mention them here.

1. There is a *metaphyſical whole*, when the eſſence of a thing is ſaid to conſiſt of two *parts*, the *genus* and the *difference*, that is, the general and the ſpecial nature, which being joined together make up a *definition*. This has been the ſubject of the foregoing ſections.

2. There is a *mathematical whole*, which is better called *integral*, when the ſeveral parts which go to make up the whole are really diſtinct from one another, and each of them may ſubſiſt apart. So the *head*, the *limbs*, and the *trunk*, are the integral parts of any large *number*; ſo theſe diſcourſes which I have written concerning *perception*, *judgment*, *reaſoning*, and *diſpoſition*, are the four integral parts of *logic*. This ſort of parts goes to make up the *completeneſs* of any ſubject; and this is the chief and moſt direct matter of our diſcourſe in this ſection.

3. There is a *phyſical or eſſential whole*, which is uſually made to ſignify and include only the two *eſſential parts* of man, *body* and *ſoul*: But I think the ſenſe of it may better be altered, or at leaſt enlarged, and ſo include all the eſſential modes, attributes, or properties, which are contained in the *comprehenſion* of any idea. This ſhall be the ſubject of diſcourſe under the *third rule to direct our conceptions*.

4. There is a *logical whole*, which is alſo called an *univerſal*; and the *parts* of it are all the *particular ideas* to which this univerſal nature extends. So a *genus is a whole* in reſpect of the ſeveral *ſpecies* which are its parts. So the ſpecies is a *whole*, and all the *individuals* are the *parts* of it. This ſhall be treated of in the *fourth rule to guide our conceptions*.

At preſent we conſider an idea as an *integral whole*, and our *ſecond rule* directs us to contemplate it *in all its parts*: But this can only refer to complex ideas, for ſimple ideas have no parts.

SECT.

SECT. VIII.

Of Division, and the Rules of it.

SINCE our minds are narrow in their capacity, and cannot survey the several parts of any complex being, with one single view, as God sees all things at once; therefore we must, as it were, take it to pieces, and consider of the parts separately, that we may have a more complete conception of the whole. So that, if I would learn the nature of a *watch*, the workman takes it to pieces and shews me the *spring*, the *wheels*, the *axles*, the *pinions*, the *balance*, the *dial plate*, the *pointer*, the *case*, &c. and describes each of these things to me apart, together with their figures and their uses. If I would know what an *animal* is, the anatomist considers the *head*, the *trunk*, the *limbs*, the *bowels*, apart from each other, and gives me distinct lectures upon each of them. So a *kingdom* is divided into its several *provinces*; a *book* into its several *chapters*; and any *science* is divided according to the several *subjects* of which it treats.

This is what we properly call the *division* of an *idea*, which is an *explication of the whole by its several parts*, or an *enumeration of the several parts* that go to compose any *whole idea*, and to render it complete. And I think when man is divided into *body* and *soul*, it properly comes under this part of the doctrine of integral *division*, as well as when the mere *body* is divided into *head*, *trunk*, and *limbs*; This division is sometimes called *partition*.

When any of the *parts* of any *idea* are yet farther divided, in order to a clear explication of the *whole*, this is called a *subdivision*; as when a *year* is divided into *months*, each month into *days*, and each day into *hours*, which may also be farther subdivided into *minutes* and *seconds*.

It is necessary, in order to the full explication of any being, to consider *each part*, and the *properties of it*, distinct *by itself*, as well as *in its relation* to the whole: For there are many properties that belong to the several parts of a being which cannot properly be ascribed to the whole, though these properties may fit each part for its proper

ſtation, and as it ſtands in that relation to the whole complex being: As in a *houſe*, the *doors* are moveable, the *rooms* ſquare, the *ceilings* white, the *windows* tranſparent, yet the *houſe* is neither moveable, nor ſquare, nor white, nor tranſparent.

The ſpecial Rules of a good Diviſion are theſe.

I Rule. *Each part ſingly taken muſt contain leſs than the whole, but all the parts taken collectively, (or together,) muſt contain neither more nor leſs than the whole.* Therefore, if in diſcourſing of a *tree* you divide it into the *trunk* and *leaves*, it is an imperfect diviſion, becauſe the *root* and the *branches* are needful to make up the whole. So *logic* would be ill divided into *apprehenſion*, *judgment*, and *reaſoning*; for *method* is a conſiderable part of the art which teaches us to uſe our reaſon right, and ſhould by no means be omitted.

Upon this account, in every diviſion wherein we deſign a perfect exactneſs, it is neceſſary to examine the whole idea with diligence, leſt we omit any parts of it through want of care; though in ſome caſes it is not poſſible, and in others it is not neceſſary, that we ſhould deſcend to the minuteſt parts.

II. Rule. *In all diviſions we ſhould firſt conſider the larger and more immediate parts of the ſubject, and not divide it at once into the more minute and remote parts.* It would by no means be proper to divide a *kingdom* firſt into *ſtreets*, and *lanes*, and *fields*; but it muſt be firſt divided into *provinces* or *counties*, then thoſe *counties* may be divided into *towns*, *villages*, *fields*, &c. and *towns* into *ſtreets* and *lanes*.

III. Rule. *The ſeveral parts of a diviſion ought to be oppoſite, that is, one part ought not to contain another.* It would be a ridiculous diviſion of an *animal* into *head*, *limbs*, *body*, and *brain*, for the *brains* are contained in the head.

Yet here it muſt be noted, that ſometimes the ſubjects of any treatiſe, or the objects of any particular ſcience, may be properly and neceſſarily ſo divided, that the ſecond may include the firſt, and the third may include the firſt and ſecond, without offending againſt this rule, becauſe in the ſecond or following parts of the ſcience or diſcourſe theſe objects are not conſidered in the ſame manner

ner as in the first; as for instance, *geometry* divides its objects into *lines*, *surfaces*, and *solids*: Now, though a *line* be contained in a *surface*, or a *solid*, yet it is not considered in a *surface*, separate and alone, or as a *mere line*, as it is in the first part of *geometry*, which treats of *lines*. So *logic* is rightly divided into *conception*, *judgment*, *reasoning*, and *method*. For, though *ideas* or *conceptions* are contained in the following parts of *logic*, yet they are not there treated of as *separate ideas*, which are the proper subject of the first part.

IV. Rule. *Let not subdivisions be too numerous without necessity:* For it is better many times to distinguish more parts at once, if the subject will bear it, than to mince the discourse by excessive dividing and subdividing. It is preferable therefore, in a treatise of *geography*, to say that in a *city* we will consider its *walls*, its *gates*, its *buildings*, its *streets*, and *lanes*, than to divide it formally first into the *encompassing* and the *encompassed* parts; the encompassing parts are the *walls* and *gates*, the encompassed parts include the *ways* and the *buildings*; the ways are the *streets* and the *lanes*; buildings consist of the *foundations* and the *superstructure*, &c.

Too great a number of subdivisions has been affected by some persons in sermons, treatises, instructions, &c. under pretence of greater accuracy: But this sort of subtilties hath often caused great confusion to the understanding, and sometimes more difficulty to the memory. In these cases it is only a good judgment can determine what *subdivisions* are useful.

V. Rule. *Divide every subject according to the special design you have in view.* One and the same idea or subject may be divided in very different manners, according to the different purposes we have in discoursing of it. So, if a *printer* were to consider the several parts of a *book*, he must divide it into *sheets*, the *sheets* into *pages*, the *pages* into *lines*, and the *lines* into *letters*. But a *grammarian* divides a *book* into *periods*, *sentences*, and *words*, or parts of speech, as *noun*, *pronoun*, *verb*, &c. A *logician* considers a *book* as divided into *chapters*, *sections*, *arguments*, *propositions*, *ideas*; and, with the help of *ontology*, he divides the *propositions* into *subject*, *object*, *property*, *relation*, *action*, *passion*, *cause*, *effect*, &c.

But

But it would be very ridiculous for a *logician* to divide a *book* into *sheets*, *pages*, and *lines*; or for a *printer* to divide it into *nouns* and *pronouns*, or into *propositions*, *ideas*, *properties*, or *causes*.

VI. Rule. *In all your divisions observe with greatest exactness the nature of things.* And here I am constrained to make a subdivision of this rule into two very necessary particulars.

(1) *Let the parts of your division be such as are properly distinguished in nature.* Do not divide asunder those parts of the idea which are intimately united in nature, nor unite those things into one part which nature has evidently disjoined: Thus, it would be very improper, in treating of an *animal body*, to divide it into the *superior* and *inferior halves*; for it would be hard to say how much belongs by nature to the *inferior half*, and how much to the *superior*. Much more improper would it be still to divide the *animal* into the *right hand parts* and *left hand parts*, which would bring greater confusion. This would be as unnatural as if a man should cleave a *hasel nut* in halves through the *husk*, the *shell*, and the *kernel*, at once, and say, a *nut is divided into these two parts*; whereas nature leads plainly to the threefold distinction of *husk*, *shell*, and *kernel*.

(2) *Do not affect duplicities, nor triplicities, nor any certain number of parts in your division of things*; for we know of no such certain number of parts which God the Creator has observed in forming all the varieties of his creatures; nor is there any uniform determined number of parts in the various subjects of human art or science; yet some persons have disturbed the order of nature, and abused their readers, by an affectation of *dichotomies*, *trichotomies*, *sevens*, *twelves*, &c. Let the nature of the subject, considered together with the *design* which you have in view, always determine the *number* of parts into which you divide it.

After all, it must be confessed, that an intimate knowledge of things, and a judicious observation, will assist in the business of *division*, as well as of *definition*, better than too nice and curious an attention to the mere formalities of logical writers, without a real acquaintance with things.

SECT.

SECT. IX.

Of a comprehensive conception of things, and of abstraction.

THE *third rule* to direct our conceptions requires us to *conceive of things comprehensively.* As we must survey an object in all its *parts* to obtain a *complete* idea of it, so we must consider it in all its *modes*, *attributes*, *properties*, and *relations*, in order to obtain a *comprehensive* conception of it.

The *comprehension* of an idea, as it was explained under the doctrine of universals, includes only the *essential modes* or *attributes* of that *idea*; but in this place the word is taken in a larger sense, and implies also the various *occasional properties*, *accidental modes*, and *relations*.

The necessity of this rule is founded upon the same reason as the former, namely, That our minds are narrow and scanty in their capacities, and as they are not able to consider all the *parts* of a complex idea *at once*, so neither can they *at once* contemplate all the different *attributes* and *circumstances* of it: We must therefore consider things *successively* and *gradually* in their various appearances and circumstances: As our natural eye cannot at once behold the *six sides of a dye or cube*, nor take cognizance of all the *points* that are marked on them, and therefore we turn up the sides successively, and thus survey and number the points that are marked on *each side*, that we may know the whole.

In order to a *comprehensive* view of any idea, we must first consider, whether the object of it has an *existence* as well as an *essence*; whether it be a *simple* or *complex idea*; whether it be a *substance* or a *mode*. If it be a *substance*, then we must inquire what are the *essential modes* of it which are necessary to its nature, and what are those *properties* or *accidents* of it which belong to it occasionally, or as it is placed in some particular circumstances: We must view it in its *internal* and *absolute* modes, and observe it in those various *external relations* in which it stands to other beings: We must consider it in its *powers* and *capacities* either to *do* or *suffer*: We must trace it up to its various *causes*,

whether supreme or subordinate. We must descend to the variety of its *effects*, and take notice of the several *ends* and *designs*, which are to be attained by it. We must conceive of it as it is either an *object* or *a subject*, what are the things that are *akin* to it, and what are the *opposites* or *contraries* of it; for many things are to be known both by their *contrary* and their *kindred* ideas.

If the thing we discourse of be a mere *mode*, we must inquire whether it belongs to *spirits* or *bodies*; whether it be a *physical* or *moral* mode: If *moral*, then we must consider its relation to *God*, to our *selves*, to our *neighbours*; its reference to *this life*, or the *life to come*. If it be a *virtue*, we must seek what are the *principles* of it, what are the *rules* of it, what are the *tendencies* of it, and what are the *false virtues* that counterfeit it, and what are the *real vices* that oppose it, what are the *evils* which attend the *neglect* of it, and what are the *rewards* of the *practice* of it, both *here* and *hereafter*.

If the subject be *historical*, or a *matter of fact*, we may then inquire whether the action was *done at all*; whether it was done *in such a manner*, or by *such persons* as is reported; at *what time* it was done; in *what place*; by *what motive*, and for *what design*; what is the *evidence* of the *fact*; *who are the witnesses*; what is their *character* and *credibility*; what *signs* there are of such a fact; what *concurrent circumstances* which may either support the truth of it, or render it doubtful.

In order to make due inquiries into all these, and many other particulars which go towards the *complete* and *comprehensive* idea of any being, the science of *ontology* is exceeding necessary. This is what was wont to be called the *first part of metaphysics* in the *Peripatetic* schools. It treats of *being in its most general nature, and of all its affections and relations*. I confess the old Popish schoolmen have mingled a number of useless subtilties with this science; they have exhausted their own spirits, and the spirits of their readers, in many laborious and intricate trifles; and some of their writings have been fruitful of *names without ideas*, which have done much injury to the sacred study of divinity. Upon this account many of the moderns have most unjustly abandoned the whole

science

science at once, and throw abundance of contempt and raillery upon the very name of *metaphysics*; but this contempt and censure is very unreasonable; for this science, separated from some Aristotelian fooleries, and scholastic subtilties, is so necessary to a distinct conception, solid judgment, and just reasoning on many subjects, that sometimes it is introduced as a *part of logic*, and not without reason. And those who utterly despise and ridicule it, either betray their own ignorance, or will be supposed to make their wit and banter a refuge and excuse for their own laziness. Yet this much I would add, that the later writers of *ontology* are generally the best on this account, because they have left out much of the ancient jargon. See the *Brief Scheme of Ontology* in the *Philosophical Essays*, by *I. Watts*.

Here let it be noted, that it is neither useful, necessary, or possible, to run through *all the modes*, *circumstances*, and *relations* of every subject we take in hand; but in *ontology* we enumerate a great variety of them, that so a judicious mind may choose what are those *circumstances*, *relations*, and *properties* of any subject, which are most necessary to the present design of him that speaks or writes, either to explain, to illustrate, or to prove the point.

As we arrive at the *complete* knowledge of an idea in all its *parts*, by that act of the mind which is called *division*, so we come to a *comprehensive* conception of a thing in its several *properties* and *relations*, by that act of the mind which is called *abstraction*; that is, we consider each single relation or property of the subject alone; and thus we do as it were withdraw and separate it in our minds, both from the subject itself, as well as from other properties and relations, in order to make a fuller observation of it.

This act of *abstraction* is said to be twofold, either *precisive* or *negative*.

Precisive abstraction is when we consider those things apart which cannot really exist apart; as when we consider a *mode* without considering its *substance* and *subject*, or one *essential mode* without *another*. *Negative abstraction* is, when we consider one thing separate from another, which may also exist without it; as when we conceive of a *subject* without conceiving of its *accidental modes* or *relations*;

tions; or when we conceive of *one accident* without thinking of *another*. If I think of *reading* or *writing* without the expreſs idea of ſome *man*, this is *preciſive abſtraction*; or if I think of the *attraction of iron*, without the expreſs idea of ſome particular magnetic body. But, when I think of a *needle* without an idea of its *ſharpneſs*, this is *negative abſtraction*; and it is the ſame when I think of its *ſharpneſs* without conſidering its *length*.

SECT. X.

Of the extenſive Conception of Things, and of Diſtribution.

AS the *completeneſs* of an idea refers to the ſeveral *parts* that compoſe it, and the *comprehenſion* of an idea includes its various *properties*; ſo the *extenſion* of an idea denotes the various *ſorts* or *kinds* of *beings* to which the ſame idea belongs: And if we would be fully acquainted with a ſubject, we muſt obſerve

This *fourth rule* to direct our conceptions, namely, *Conceive of things in all their extenſion*; that is, we muſt ſearch out the various *ſpecies*, or *ſpecial natures* which are contained under it, as a *genus* or *general nature*. If we would know the nature of an *animal* perfectly, we muſt take cognizance of *beaſts*, *birds*, *fiſhes*, and *inſects*, as well as *men*, all which are contained under the general nature and name of *animal*.

As an *integral whole* is diſtinguiſhed into its ſeveral parts by *diviſion*; ſo the word *diſtribution* is moſt properly uſed when we diſtinguiſh an *univerſal whole* into its ſeveral kinds or ſpecies: And perhaps it had been better if this word had been always confined to this ſignification, though it muſt be confeſſed that we frequently ſpeak of the *diviſion* of an idea into its ſeveral kinds, as well as into its ſeveral parts.

The rules of *a* good *diſtribution* are much the ſame with thoſe which we have before applied to *diviſion*, which may be juſt repeated again in the brieſeſt manner, in order to give examples of them.

Rule I. Each part *ſingly* taken muſt contain leſs than the whole, but all the parts taken *collectively*, or *together*,

muſt

must contain neither more nor less than the whole; or, as *logicians* sometimes express it, the *parts of the division ought to exhaust the whole thing which is divided.* So *medicine* is justly distributed into *prophylactic*, or the art of preserving health; and *therapeutic*, or the art of restoring health; for there is no other sort of medicine besides these two. But *men* are not well distributed into *tall* or *short*, for there are some of a *middle stature.*

Rule II. In all *distributions* we should first consider the larger and more immediate kinds or species, or ranks of being, and not divide a thing at once into the more minute and remote. A *genus* should not at once be divided into *individuals*, or even into the *lowest species*, if there be a *species superior.* Thus it would be very improper to divide *animal* into *trout*, *lobster*, *eel*, *dog*, *bear*, *eagle*, *dove*, *worm*, *and butterfly*, for these are inferior kinds; whereas *animal* ought first to be distributed into *man*, *beast*, *bird*, *fish*, *insect*; and then *beast* should be distributed into *dog*, *bear*, &c. *Bird* into *eagle*, *dove*, &c. *Fish* into *trout*, *eel*, *lobster*, &c.

It is irregular also to join any inferior species in the same rank or order with the superior; as, if we should distinguish *animals* into *birds*, *bears*, and *oysters*, &c. it would be a ridiculous distribution.

Rule III. The several parts of a distribution ought to be opposite; that is, one species or class of beings in the same rank of division, ought not to contain or include another; so *men* ought not to be divided into the *rich*, the *poor*, the *learned*, and the *tall*; for *poor men* may be both *learned* and *tall*, and so may the *rich.*

But it will be objected, Are not *animated bodies* rightly distributed into *vegetative* and *animal*, or (as they are usually called) *sensitive?* Now the *sensitive* contains the *vegetative* nature in it, for *animals* grow as well as plants. I answer, that in this, and in all such distributions, the word *vegetative* signifies *merely vegetative*; and in this sense *vegetative* will be sufficiently opposite to *animal*; for it cannot be said of an *animal* that it contains *mere vegetation* in the idea of it.

Rule IV. Let not subdivisions be too numerous without necessity; therefore I think *quantity* is better distinguished at once into a *line*, a *surface*, and a *solid*; than to say,

say, as *Ramus* does, that *quantity is either a line or a thing lined;* and a *thing lined is either a surface or a solid.*

Rule V. Distribute every subject according to the special design you have in view, so far as is necessary or useful to your present inquiry. Thus a *politician* distributes mankind according to their civil characters into the *rulers* and the *ruled;* and a *physician* divides them into the *sick* or the *healthy;* but a *divine* distributes them into *Turks, Heathens, Jews,* or *Christians.*

Here *note,* That it is a very useless thing to distribute any idea into such kinds or members as have no different properties to be spoken of; as it is mere trifling to divide *right angles* into such *whose legs are equal, and whose legs are unequal,* for as to the mere right angles they have no different properties.

Rule VI. In all your distributions observe the nature of things with great exactness, and do not affect any particular form of distribution, as some persons have done, by dividing *every genus* into *two species,* or into *three species;* whereas nature is infinitely various, and human affairs and human sciences have as great a variety; nor is there any one form of distribution that will exactly suit with all subjects.

Note, It is to this doctrine of *distribution of a genus into its several species* we must also refer the distribution of a *cause* according to its several *effects,* as some *medicines are heating, some are cooling;* or an *effect,* when it is distinguished by its causes, as *faith is either built upon divine testimony* or *human.* It is to this head we refer particular *artificial bodies,* when they are distinguished according to the *matter* they are made of, as a *statue is either of brass, of marble, or wood,* &c. and any other *beings,* when they are distinguished according to their *end* and *design,* as the *furniture* of *body* or *mind is either for ornament or use.* To this head also we refer *subjects* when they are divided according to their *modes* or *accidents;* as *men are either merry, or grave, or sad;* and *modes,* when they are divided by their *subjects,* as *distempers belong to the fluids, or to the solid parts of the animal.*

It is also to this place we reduce the *proposals of a difficulty under its various cases,* whether it be in speculation or practice: As, to shew the reason of *sun-beam burning wood,*

whether

whether it be done by a convex glass or a concave ; or to shew the *construction and mensuration of triangles*, whether you have two angles and a side given, or two sides and an angle, or only three sides. Here it is necessary to distribute or *divide a difficulty in all its cases*, in order to gain a perfect knowledge of the subject you contemplate.

It might be observed here, that *logicians* have sometimes given a *mark* or *sign* to distinguish when it is an *integral whole* that is divided into its *parts* or *members*, or when it is a *genus*, an *universal whole*, that is distributed into its *species* and *individuals*. The rule they give is this : Whensoever the whole idea can be directly and properly affirmed of each part, as, a *bird is an animal*, a *fish is an animal*, *Bucephalus is a horse*, *Peter is a man*, then it is a distribution of a *genus* into its *species*, or a *species* into its *individuals* : But when the whole cannot be thus directly affirmed concerning every part, then it is a division of an *integral* into its several *parts* or *members* ; as we cannot say the *head*, the *breast*, the *hand*, or the *foot is an animal*, but we say, *the head is a part of the animal*, and the *foot* is another *part*.

This rule may hold true generally in corporeal beings, or perhaps in all substances : But, when we say *the fear of God is wisdom, and so is human civility* ; *criticism is true learning, and so is philosophy : To execute a murderer is justice, and to save and defend the innocent is justice too.* In these cases it is not so easily determined, whether an integral whole be divided into its parts, or an universal into its species : For the *fear of God* may be called either one *part*, or one *kind* of *wisdom* : *Criticism* is one *part*, or one *kind* of *learning* : And the *execution of a murderer* may be called a *species of justice*, as well as a *part* of it. Nor indeed is it a matter of great importance to determine this controversy.

SECT. XI.

Of an orderly Conception of Things.

THE *last rule* to direct our conceptions, is, that *we should rank and place them in a proper method and just order*. This is of necessary use to prevent confusion ; for, as a *trader* who never places his goods in his shop or warehouse

houſe in a regular order, nor keeps his accounts of his buying and ſelling, paying and receiving, in a juſt method, is in the utmoſt danger of plunging all his affairs into confuſion and ruin; ſo a *ſtudent* who is in the ſearch of truth, or an *author* or *teacher* who communicates knowledge to others, will very much obſtruct his deſign, and confound his own mind or the minds of his hearers, unleſs he range his ideas in juſt order.

If we would therefore become ſucceſsful learners or teachers we muſt not conceive of things in a *confuſed heap*, but diſpoſe our ideas in ſome *certain method*, which may be moſt eaſy and uſeful both for the underſtanding and memory; and be ſure, as much as may be, *to follow the nature of things*, for which many rules might be given; namely,

1. Conceive as much as you can of the *eſſentials* of any ſubject, before you conſider its *accidentals*.

2. Survey firſt the general *parts* and *properties* of any ſubject, before you extend your thoughts to diſcourſe of the particular *kinds* or *ſpecies* of it.

3. Contemplate things firſt in their own *ſimple natures*, and afterwards view them in *compoſition* with other things; unleſs it be your preſent purpoſe to take a *compound being* to pieces, in order to find out, or to ſhew the nature of it, by ſearching and diſcovering of what *ſimples* it is compoſed.

4. Conſider the *abſolute modes* or affections of any being as it is in itſelf, before you proceed to conſider it *relatively*, or to ſurvey the various *relations* in which it ſtands to other beings, &c.

Note, Theſe rules chiefly belong to the method of inſtruction which the learned call *ſynthetic*.

But in the regulation of our ideas, there is ſeldom an abſolute neceſſity that we ſhould place them in this or the other particular method: It is poſſible in ſome caſes that many methods may be equally good, that is, may equally aſſiſt the underſtanding and the memory: To frame a method exquiſitely accurate, according to the ſtrict nature of things, and to maintain this accuracy from the beginning to the end of a treatiſe, is a moſt rare and difficult thing, if not impoſſible. But a larger account of *method* would be very improper in this place, leſt we anticipate what belongs to the *fourth part of logic*.

SECT.

SECT. XII.

These five Rules of Conception exemplified.

IT may be useful here to give a specimen of the *five special rules to direct our conceptions*, which have been the chief subject of this long chapter, and represent them practically in one view.

Suppose the theme of our discourse was the *passions of the mind.*

1*st*, To gain a *clear* and *distinct* idea of *passion*, we must *define* both the *name* and the *thing*.

To begin with the *definition of the name*. We are not here to understand the word *passion* in its vulgar and most limited sense, as it signifies merely *anger* or *fury*; nor do we take it in its most extensive philosophical sense, for the *sustaining the action* of an *agent*; but in the more limited philosophical sense. *passions* signify the *various affections of the mind*, such as *admiration*, *love*, or *hatred*; this is the definition of the name.

We proceed to the *definition of the thing*. *Passion* is defined *a sensation of some special commotion in animal nature, occasioned by the mind's perception of some object suited to excite that commotion.* Here * the *genus*, or general nature of *passion*, is a *sensation of some special commotion in animal nature*; and herein it agrees with hunger, thirst, pain, &c. The *essential difference* of it is, that this *commotion arises from a thought*

* Since this was written, I have published a short treatise of the *passions*, wherein I have so far varied from this definition, as to call them *sensible commotions of our whole nature, both soul and body, occasioned by the mind's perceptions of some object*, &c. I made this alteration in the description of the passions in that book chiefly to include, in a more explicit manner, the passions of *desire* and *aversion*, which are acts of *volition* rather than *sensations*. Yet since some commotions of animal nature attend all the passions, and since there is always a sensation of these commotions, I shall not change the definition I have written here; for this will agree to all the passions whether they include any act of volition or not; nor indeed is the matter of any great importance. *Nov.* 17. 1728.

or perception of the mind, and hereby it is distinguished from hunger, thirst, or pain.

2*dly*, We must conceive of it *completely*, or survey the several parts that compose it. These are, (1.) *The mind's perception of some object.* (2.) *The consequent ruffle, or special commotion of the nerves, and blood, and animal spirits.* And, (3.) *The sensation of this inward commotion.*

3*dly*, We must consider it *comprehensively*, in its various *properties.* The most essential attributes that make up its nature have been already mentioned under the foregoing heads. Some of the most considerable properties that remain are these, namely, That *passion belongs to all mankind* in greater or lesser degrees: *It is not constantly present with us, but upon some certain occasions:* It is *appointed by our Creator for various useful ends and purposes*, namely, to give us vigour in the pursuit of what is good and agreeable to us, or in the avoidance of what is hurtful: *It is very proper for our state of trial in this world: It is not utterly to be rooted out of our nature, but to be moderated and governed according to the rules of virtue and religion*, &c.

4*thly*, We must take cognizance of the various *kinds* of it, which is called an *extensive conception* of it. If the object which the mind perceives be very *uncommon*, it excites the passion of *admiration*: If the object appears *agreeable*, it raises *love*: If the agreeable object be *absent* and *attainable*, it causes *desire*: If likely to be *obtained*, it excites *hope*: If *unattainable*, *despair.* If it be *present* and *possessed*, it is the passion of *joy*: If *lost*, it excites *sorrow*: If the object be *disagreeable*, it causes in general *hatred* or *aversion*: If it be *absent*, and yet we are in *danger* of it, it raises our *fear*: If it be *present*, it is *sorrow*, and *sadness*, &c.

5*thly*, All these things, and many more, which go to compose a treatise on this subject, must be placed in their *proper order*: A slight specimen of which is exhibited in this short account of *passion*, and which that admirable author *Descartes* has treated of at large; though, for want of sufficient experiments and observations in natural philosophy, there are some few mistakes in his account of animal nature.

SECT.

SECT. XIII.

An Illustration of these five rules by Similitudes.

THUS we have brought the first part of *logic* to a conclusion: And it may not be improper here to represent its excellencies (so far as we have gone) by general hints of its *chief design* and *use*, as well as by a various *comparison* of it to those instruments which mankind have invented for their several conveniences and improvements.

The *design of logic* is not to furnish us with the perceiving faculty, but only *direct* and *assist* us in the use of it: It doth not give us the objects of our ideas, but only *casts such a light* on those objects which nature furnishes us with, that they may be the more clearly and distinctly known: It doth not add new parts or properties to things, but it *discovers* the various parts, properties, relations, and dependencies of one thing upon another, and by *ranking all things* under *general* and *special heads*, it renders the nature, or any of the properties, powers, and uses of a thing, more easy to be found out, when we seek in what rank of beings it lies, and wherein it agrees with, and wherein it differs from others.

If any comparisons would illustrate this, it may be thus represented.

I. When logic assists us to attain a *clear* and *distinct* conception of the nature of things by *definition*, it is like those *glasses* whereby we behold such objects *distinctly*, as, by reason of their smallness, or their great distance, appear in *confusion* to the naked eye: So the telescope discovers to us distant wonders in the heavens, and shews the *milky way*, and the *bright cloudy spots* in a very dark sky, to be a collection of little stars, which the eye unassisted beholds in a mingled confusion. So when bodies are too *small* for our sight to survey them distinctly, then the *microscope* is at hand for our assistance, to shew us all the *limbs* and *features* of the most *minute animals*, with great clearness and distinction.

II. When we are taught by logic to view a thing *completely* in all its *parts*, by the help of *division*, it has the use of

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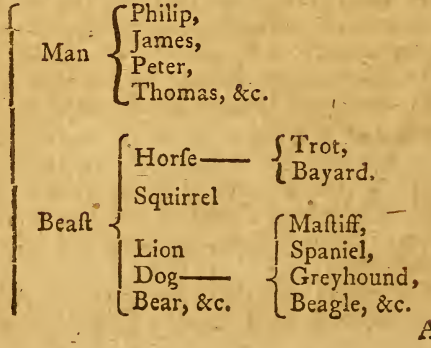
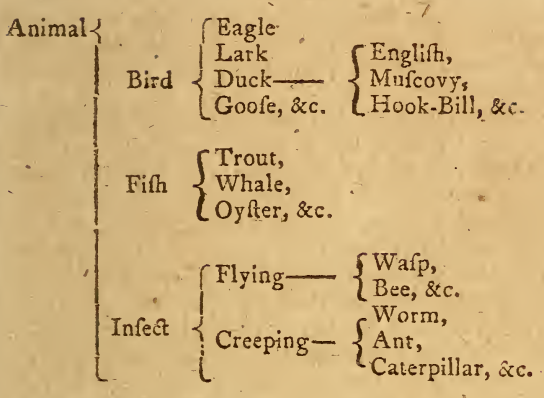
an *anatomical knife*, which diſſects an animal body, and ſeparates the *veins*, *arteries*, *nerves*, *muſcles*, *membranes*, &c. and ſhews us the ſeveral parts which go to the compoſition of a complete animal.

III. When logic inſtructs us to ſurvey an object *comprehenſively* in all the *modes*, *properties*, *relations*, *faces*, and *appearances* of it, it is of the ſame uſe as a terreſtrial globe, which turning round on its axis repreſents to us all the variety of *lands* and *ſeas*, *kingdoms* and *nations*, on the ſurface of the earth, in a very ſhort ſucceſſion of time ſhews the ſituations and various relations of them to each other, and gives a comprehenſive view of them in miniature.

IV. When this art teaches us to *diſtribute* any *extenſive* idea into its different *kinds* or *ſpecies*, it may be compared to the *priſmatic glaſs*, that receives the ſun-beams or *rays of light*, which ſeem to be uniform when falling upon it, but it ſeparates and diſtributes them into their different *kinds* and *colours*, and ranks them in their proper ſucceſſion.

Or, if we deſcend to *ſubdiviſions* and ſubordinate ranks of being, then *diſtribution* may alſo be ſaid to form the reſemblance of a *natural tree*, wherein the *genus* or general idea ſtands for the *root* or *ſtock*, and the ſeveral *kinds* or *ſpecies*, and *individuals*, are diſtributed abroad, and repreſented in their dependance and connection, like the ſeveral *boughs*, *branches*, and *leſſer ſhoots*. For inſtance, let *animal* be the *root* of a logical tree the reſemblance is ſeen by mere inſpection, though the root be not placed at the bottom of the page.





The same similitude will serve also to illustrate the *division* and *subdivision* of an *integral whole* into its several parts.

When logic directs us to place all our ideas in a *proper method*, most convenient both for instruction and memory, it doth the same service as the *cases of well-contrived shelves in a large library*, wherein *folios*, *quartos*, *octavos*, and *lesser volumes*, are disposed in such exact order, under the particular heads of *divinity*, *history*, *mathematics*, *ancient* and *miscellaneous* learning, *&c.* that the student knows where to find every book, and has them all as it were within his command at once, because of the exact order wherein they are placed.

The man who has such assistances as these at hand, in order to manage his *conceptions*, and regulate his *ideas*, is well prepared to improve his knowledge, and to *join these ideas together* in a regular manner by *judgment*, which is the second operation of the mind, and will be the subject of the second part of logic.

THE SECOND PART OF LOGIC.

OF JUDGMENT AND PROPOSITION.

WHEN the mind has got acquaintance with things by framing *ideas* of them, it proceeds to the next operation, and that is, to compare these ideas together, and to join them by *affirmation*, or disjoin them by *negation*, according as we find them to agree or disagree. This act of the mind is called *judgment*; as when we have by perception obtained the ideas of *Plato* a *philosopher*, *man innocent*, we form these judgments; *Plato was a Philosopher*: *No man is innocent*.

Some writers have asserted, that *judgment* consists in a *mere perception of the agreement or disagreement of ideas*. But I rather think there is an act of the will (at least in most cases) necessary to form a *judgment*; for, though we do perceive, or think we perceive, ideas to *agree* or *disagree*, yet we may sometimes *refrain from judging* or assenting to the perception, for fear lest the perception should not be sufficiently clear, and we should be mistaken: And I am well assured at other times, that there are multitudes of *judgments formed*, and a firm assent given to ideas *joined* or *disjoined*, before there is any clear perception whether they agree or disagree; and this is the reason of so many *false judgments* or mistakes among men. Both these practices are a proof that *judgment* has something of the *will* in it, and does not merely consist in *perception*; since we sometimes

times judge (though unhappily) without perceiving, and sometimes we perceive without immediate judging.

As an *idea* is the result of our *conception* or *apprehension*, so a *proposition* is the effect of *judgment*. The foregoing sentences, which are examples of the act of judgment, are properly called *propositions*. *Plato is a philosopher*, &c.

Here let us consider,

1. *The general nature of a* proposition, *and the parts of which it is composed.*
2. *The various divisions or kinds of* propositions.
3. *The springs of false judgment, or the doctrine of prejudices.*
4. *General directions to assist us in judging right.*
5. *Special rules to direct us in judging particular objects.*

CHAP. I.

Of the Nature of a PROPOSITION, *and its several Parts.*

A *Proposition* is a sentence wherein two or more *ideas* or *terms* are joined or disjoined by one affirmation or negation, as *Plato was a philosopher; Every angle is formed by two lines meeting*: *No man living on earth can be completely happy*. When there are ever so many ideas or terms in the sentence, yet if they are joined or disjoined merely by one single affirmation or negation, they are properly called but *one proposition*, though they may be resolved into *several* propositions which are implied therein, as will appear hereafter.

In describing a *proposition*, I use the words *terms* as well as *ideas*, because, when mere ideas are joined in the mind without words, it is rather called a *judgment*; but when clothed with words it is called a *proposition*, even though it be in the mind only, as well as when it is expressed by speaking or writing.

There are *three* things which go to the nature and constitution of a proposition, namely, the *subject*, the *predicate*, and the *copula*.

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The *subject* of a propoſition is that concerning which any thing is affirmed or denied: So *Plato*, *angle*, *man living on earth*, are the ſubjects of the foregoing propoſitions.

The *predicate* is that which is affirmed or denied of the ſubject; ſo *philoſopher* is the predicate of the firſt propoſition; *formed by two lines meeting*, is the predicate of the ſecond; *capable of being completely happy*, the proper predicate of the third.

The *ſubject* and *predicate* of a *propoſition* taken together, are called the *matter* of it; for theſe are the materials of which it is made.

The *copula* is the *form* of a propoſition; it repreſents the act of the mind affirming or denying, and it is expreſſed by the words, *am*, *art*, *is*, *are*, &c. or *am not*, *art not*, *is not*, *are not*, &c.

It is not a thing of importance enough to create diſpute, whether the words *no*, *none*, *not*, *never*, &c. which disjoin the idea or terms in a negative propoſition, ſhall be called a part of the ſubject of the *copula*, or of the *predicate*. Sometimes perhaps they may ſeem moſt naturally to be included in one, and ſometimes in the other of theſe, though a propoſition is uſually denominated *affirmative* or *negative* from its *copula*, as hereafter.

Note 1. Where each of theſe parts of a propoſition is not expreſſed diſtinctly in ſo many words, yet they are all underſtood, and implicitly contained therein; as *Socrates diſputed*, is a complete propoſition, for it ſignifies *Socrates was diſputing*. So *I die*, ſignifies *I am dying*. *I can write*, that is, *I am able to write*. In Latin and Greek one ſingle word is many times a complete compoſition.

Note 2. Theſe words *am*, *art*, *is*, &c. when they are uſed alone without any other predicate, ſignify both the *act of the mind judging*, which includes the *copula*, and ſignify alſo *actual* exiſtence, which is the *predicate* of that propoſition. So *Rome is*, ſignifies *Rome is exiſtent*: *There are ſome ſtrange monſters*: that is, *Some ſtrange monſters are exiſtent*: *Carthage is no more*, that is, *Carthage has no being*.

Note 3. The ſubject and predicate of a propoſition are not always to be known and diſtinguiſhed by the placing of the words in the ſentence, but by reflecting duly on the ſenſe of the words, and on the mind and deſign of the

ſpeaker.

ſpeaker or writer: As if I ſay, *In Africa there are many lions*, I mean *Many lions are exiſtent in Africa*: *Many lions* is the ſubject, and *exiſtent in Africa* is the predicate. *It is proper for a philoſopher to underſtand geometry*; here the word *proper* is the predicate, and all the reſt is the ſubject, except *Is* the copula.

Note 4. The ſubject and predicate of a propoſition ought always to be two different *ideas*, or two different *terms*; for, where both the *terms* and *ideas* are the ſame, it is called an *identical propoſition*, which is mere trifling, and cannot tend to promote knowledge; ſuch as, *A rule is a rule*, or *A good man is a good man*.

But there are ſome propoſitions, wherein the *terms* of the ſubject and predicate ſeem to be the ſame; yet the *ideas* are not the ſame; nor can theſe be called *purely identical* or trifling propoſitions; ſuch as *Home is home*; that is, *Home is a convenient* or *delightful place*; *Socrates is Socrates ſtill*; that is, *The man Socrates is ſtill a philoſopher*: *The hero was not a hero*; that is, *The hero did not ſhew his courage*; *What have I written, I have written*; that is, *What I wrote, I ſtill approve, and will not alter it*: *What is done, is done*; that is, *it cannot be undone*. It may be eaſily obſerved in theſe propoſitions the term is *equivocal*, for in the *predicate* it has a different idea from what it has in the *ſubject*.

There are alſo ſome propoſitions wherein the *terms* of the ſubject and predicate differ, but the *ideas* are the ſame; and theſe are not *merely identical* or trifling propoſitions; as *impudent* is *ſhameleſs*; a *billow* is a *wave*; or *fluctus* (in Latin) is a *wave*; a *globe* is a *round body*. In theſe propoſitions, either the words are explained by a definition of the name, or the ideas by a definition of the thing, and therefore they are by no means uſeleſs when formed for this purpoſe.

CHAP.

CHAP. II.

Of the various Kinds of PROPOSITIONS.

PROPOSITIONS may be distributed into various kinds, according to their *subject*, their *copula*, their *predicate*, their *nature* or *composition*, their *sense*, and their *evidence*, which distributions will be explained in the following sections.

SECT. I.

Of Universal, Particular, Indefinite, and Singular Propositions.

PRopositions may be divided, according to their *subject*, into *universal* and *particular*; this is usually called a division arising from the *quantity*.

An *universal proposition* is when the subject is taken according to the whole of its extension; so, if the subject be a *genus*, or a general nature, it includes all its *species* or *kinds*: If the subject be a *species*, it includes all individuals. This universality is usually signified by these words, *all*, *every*, *no*, *none*, or the like; as, *All men must die*: *No man is almighty*: *Every creature had a beginning*.

A *particular proposition*, is when the subject is not taken according to its whole extension; that is, when the term is limited and restrained to some one or more of those *species* or *individuals* whose general nature it expresses, but reaches not to all; and this is usually denoted by the words, *some*, *many*, *few*, *there are which*, &c. as, *Some birds can sing well*; *Few men are truly wise*: *There are parrots which will talk an hundred things*.

A *singular proposition* is when the subject is a singular or individual term or idea; as, *Descartes was an ingenious philosopher*: *Sir Isaac Newton has far exceeded all his predecessors*: *The palace at Hampton Court is a pleasant dwelling*: *This day is very cold*. The subject here must be taken according to the whole of its extension, because, being an

individual,

individual, it can only extend to one, and it muſt therefore be regulated by the laws of *univerſal propoſitions*.

An *indefinite propoſition*, is when no note, either of univerſality or particularity, is prefixed to a ſubject, which is in its own nature general; as, *A planet is ever changing its place*: *Angels are noble creatures*. Now this ſort of propoſition, eſpecially when it deſcribes the nature of things, is uſually counted *univerſal* alſo, and it ſuppoſes the ſubject to be taken in its whole extenſion: For, if there were any *planet* which did not *change its place*, or any *angel* that were not a *noble creature*, theſe propoſitions would not be ſtrictly true.

Yet, in order to ſecure us againſt miſtakes in judging of *univerſal*, *particular*, and *indefinite* propoſitions, it is neceſſary to make theſe following remarks.

I. Concerning *univerſal propoſitions*.

Note 1. Univerſal terms may either denote a *metaphyſical*, a *phyſical*, or a *moral* univerſality.

A *metaphyſical* or *mathematical univerſality*, is, when all the particulars contained under any general idea have the ſame predicate belonging to them, without any exception whatſoever; or when the predicate is ſo eſſential to the univerſal ſubject, that it deſtroys the very nature of the ſubject to be without it; as, *All circles have a center and circumference*: *All ſpirits in their own nature are immortal*.

A *phyſical* or *natural univerſality*, is when, according to the order and common courſe of nature, a predicate agrees to all the ſubjects of that kind, though there may be ſome accidental and preternatural exceptions; as, *All men uſe words to expreſs their thoughts*, yet *dumb* perſons are excepted, for they cannot ſpeak. *All beaſts have four feet*, yet there may be ſome *monſters* with five; or *maimed* who have but three.

A *moral univerſality*, is when the predicate agrees to the greateſt part of the particulars which are contained under the univerſal ſubject; as *All negroes are ſtupid creatures*: *All men are governed by affection rather than by reaſon*: *All the old Romans loved their country*: And the ſcripture uſes this language, when St. Paul tells us, *The Cretes are always liars*.

Now it is evident, that a ſpecial or ſingular concluſion

cannot

cannot be inferred from a *moral universality*, nor always and infallibly from a *physical* one though it may be always inferred from an universality which is *metaphysical*, without any danger or possibility of a mistake.

Let it be observed also, that usually we make little or no distinction in common language, between a subject that is *physically* or *metaphysically* universal.

Note 2. An *universal* term is sometimes taken *collectively* for all its particular ideas united together, and sometimes *distributively*, meaning each of them single and alone.

Instances of a *collectively universal* are such as these: *All these apples will fill a bushel*: *All the hours of the night are sufficient for sleep*: *All the rules of Grammar overload the memory*. In these propositions it is evident, that the predicate belongs not to the *individual*, *separately*, but to the *whole collective* idea; for we cannot affirm the same predicate if we change the word *all* into *one* or into *every*, we cannot say *one apple* or *every apple will fill a bushel*. Now such a *collective idea*, when it becomes the subject of a proposition, ought to be esteemed as one single thing; and this renders the proposition *singular* or *indifinite*, as we shall shew immediately.

A *distributive universal* will allow the word *all* to be changed into *every*, or into *one*, and by this means is distinguished from a *collective*.

Instances of a *distributive universal* are the most common on every occasion; as, *All men are mortal*: *Every man is a sinner*, &c. But, in this sort of *universal* there is a distinction to be made, which follows in the next remark.

Note 3. When an *universal term* is taken *distributively*, sometimes it includes all the individuals contained in its inferior species: As when I say, *Every sickness has a tendency to death*; I mean, *every individual sickness*, as well as *every kind*. But sometimes it includes no more than merely *each species* or *kind*; as, when the Evangelist says, *Christ healed every disease*, or *every disease was healed by Christ*; that is, *every kind* of disease. The *first* of these, logicians call the distribution of an universal *in singula generum*; the *last* is a distribution *in genera singulorum*. But, either of them joined to the subject, render a proposition *universal*.

Note 4. The *universality* of a subject is often restrained

by a part of the predicate; as when we say, *All men learn wisdom by experience*: the universal subject, *all men*, is limited to signify only *all those men who learn wisdom*. The scripture also uses this sort of language, when it speaks of *all men being justified by the righteousness of one*, Rom. v. 18. that is *all men who are justified* obtain it in this way.

Observe here, That not only a *metaphysical* or *natural*, but a *moral* universality also is oftentimes to be restrained by a part of the predicate; as when we say, *All the Dutch are good seamen*: *All the Italians are subtil politicians*; that is, those among the Dutch that are *seamen* are good seamen; and those among the Italians who are *politicians* are subtil politicians, that is, they are generally so.

Note 5. The universality of a term is many times restrained by the particular *time*, *place*, *circumstance*, &c. or the *design* of the speaker; as, if we were in the city of *London*, and say, *All the weavers went to present their petition*; we mean only, *All the weavers who dwell in the city*. So when it is said in the gospel, *All men did marvel*, Mark v. 20. it reaches only to *All those men who heard of the miracles of our Saviour*.

Here also it should be observed, that a *moral universality* is restrained by *time*, *place*, and other circumstances, as well as a *natural*; so that by these means the word *all* sometimes does not extend to a tenth part of those who at first might seem to be included in that word.

One occasion of these difficulties and ambiguities, that belong to *universal propositions*, is the common humour and temper of mankind, who generally have an inclination to magnify their ideas, and to talk roundly and *universally* concerning any thing they speak of; which has introduced universal terms of speech into custom and habit, in all nations and all languages, more than nature or reason would dictate; yet, when this custom is introduced, it is not at all improper to use this sort of language in solemn and sacred writings, as well as in familiar discourse.

II. Remarks concerning *indefinite propositions*.

Note 1. Propositions carrying in them universal forms of expression may sometimes drop the *note of universality*, and become *indefinite*, and yet retain the same universal sense, whether *metaphysical*, *natural*, or *moral*, whether *collective* or *distributive*. We

We may give instances of each of these.

Metaphysical; as, *A circle has a center and circumference.* Natural; as, *Beasts have four feet.* Moral; as, *Negroes are stupid creatures.* Collective; as, *The apples will fill a bushel.* Distributive; as, *Men are mortal.*

Note 2. There are many cases wherein a *collective idea* is expressed in a proposition by an *indefinite term*, and that where it describes the *nature* or *quality* of the subject, as well as when it declares some *past matters of fact*; as, *Fir-trees set in good order will give a charming prospect*; this must signify a *collection* of fir-trees, for one makes no prospect. In matters of fact this is more evident and frequent; as, *The Romans overcame the Gauls: The robbers surrounded the coach: The wild geese flew over the Thames in the form of a wedge.* All these are collective subjects.

Note 3. In *indefinite propositions* the subject is often restrained by the predicate, or by the special time, place, or circumstances, as well as in propositions which are expressly universal; as, *The Chinese are ingenious silk-weavers*; that is, those Chinese which are *silk-weavers* are *ingenious* at their work. *The stars appear to us when the twilight is gone*; this can signify no more than the *stars* which are above our horizon.

Note 4. All these restrictions tend to reduce some *indefinite* propositions almost into *particular*, as will appear under the next remarks.

III. Remarks concerning *particular propositions.*

Note 1. A *particular* proposition may sometimes be expressed *indefinitely*, without any note of particularity prefixed to the subject; as, *In times of confusion laws are not executed: Men of virtue are disgraced, and murderers escape*; that is, *some laws, some men of virtue, some murderers*: Unless we should call this language a *moral universality*, though I think it can hardly extend so far.

Note 2. The words *some, a few*, &c. though they generally denote a proper *particularity*, yet sometimes they express a *collective idea*; as, *Some of the enemies beset the general around: A few Greeks would beat a thousand Indians.*

I conclude this section with a few *general remarks* on this subject, namely,

Gen. Rem. I. Since *Universal, indefinite* and *particular* terms,

terms, in the plural number, may either be taken in a *collective* or *distributive* sense, there is one short and easy way to find when they are *collective*, and when *distributive*; namely, If the plural number may be changed into the singular, that is, if the predicate will agree to one single subject, it is a *distributive* idea; if not, it is *collective*.

Gen. Rem. II. *Universal* and *particular* terms, in the plural number; such as, *all, some, few, many*, &c. when they are taken in their *distributive* sense, represent *several single ideas*; and when they are thus affixed to the subject of a proposition, render that proposition *universal* or *particular*, according to the universality or particularity of the terms affixed.

Gen. Rem. III. *Universal* and *particular* terms, in the plural number, taken in their *collective* sense, represent generally one *collective idea*.

If this one *collective idea* be thus represented, (whether by universal or particular terms) as the subject of a proposition, which *describes the nature of a thing*, it properly makes either a *singular* or an *indefinite proposition*; for the words *all, some, a few*, &c. do not then denote the *quantity* of the proposition, but are esteemed merely as terms which connect the individuals together, in order to compose *one collective idea*. Observe these instances; *All the sycamores in the garden would make a large grove*; that is, this one collection of sycamores, which is a *singular idea*. *Some of the sycamores in the garden would make a fine grove*: *Sycamores would make a noble grove*: In these last the subject is rather *indefinite* than *singular*. But it is very evident, that in each of these propositions the predicate can only belong to a *collective idea*, and therefore the subject must be esteemed a *collective*.

If this *collective idea* (whether represented by universal or particular terms) be used in *describing past matters of fact*, then it is generally to be esteemed a *singular* idea, and renders the proposition *singular*; as, *All the soldiers of Alexander made but a little army*: *A few Macedonians vanquished the large army of Darius*: *Some grenadiers in the camp plundered all the neighbouring towns*.

Now we have shewn before, that if a proposition describin the *nature of things* has an *indefinite* subject, it is generally

ally to be esteemed *universal* in its propositional sense: And, if it has a *singular subject*, in its propositional sense it is always ranked with *universals*.

After all, we must be forced to confess, that the language of mankind, and the idioms of speech, are so exceeding various, that it is hard to reduce them to a few rules; and, if we would gain a just and precise idea of every *universal*, *particular*, and *indefinite* expression, we must not only consider the peculiar idiom of the language, but the time, the place, the occasion, the circumstances of the matter spoken of, and thus penetrate, as far as possible, into the design of the speaker or writer.

SECT. IV.

Of Affirmative and Negative PROPOSITIONS.

WHEN a proposition is considered with regard to its *copula*, it may be divided into *affirmative* and *negative*; for it is the *copula* joins or disjoins the *two ideas*. Others call this a division of propositions according to their quality.

An *affirmative proposition* is when the idea of the predicate is supposed to agree to the idea of the subject, and is joined to it by the word *is*, or *are*, which is the *copula*; as, *All men are sinners*. But, when the predicate is not supposed to agree with the subject, and is disjoined from it by the particles, *is not*, *are not*, &c. the proposition is *negative*; as, *Man is not innocent*; or, *No man is innocent* In an affirmative proposition, we assert one thing to belong to another, and, as it were, unite them in thought and word: In negative propositions, we separate one thing from another, and deny their agreement.

It may seem something odd, that two ideas or terms are said to be *disjoined*, as well as *joined* by a copula: But, if we can but suppose the negative particles do really belong to the copula of negative propositions, it takes away the harshness of the expression; and, to make it yet softer, we may consider that the predicate and subject may be properly said to be joined *in a form of words as a proposition*, by connective particles in grammar or logic, though they

are disjoined in their ſenſe and ſignification. Every youth who has learned his grammar, knows there are ſuch words as *disjunctive propoſitions*.

Several things are worthy our notice on this ſubject.

Note 1*ſt*, As there are ſome *terms*, or *words*, and *ideas*, (as I have ſhewn before) concerning which it is hard to determine whether they are *negative* or *poſitive*, ſo there are ſome *propoſitions* concerning which it may be difficult to ſay, whether they *affirm* or *deny*: As, when we ſay, *Plato was no fool*: *Cicero was no unſkilful orator*: *Cæſar made no expedition to Muſcovy*. *An Oyſter has no part like an eel*: *It is not neceſſary for a phyſician to ſpeak French*; and *for a phyſician to ſpeak French is needleſs*. The *ſenſe* of theſe propoſitions is very plain and eaſy, though logicians might ſquabble perhaps a whole day, whether they ſhould rank them under the names of *negative* or *affirmative*.

Note 2, In Latin and Engliſh, two negatives joined in one ſentence make an affirmative; as when we declare, *No man is not mortal*; it is the ſame as though we ſaid, *Man is mortal*. But, in Greek, and oftentimes in French, two negatives make but a ſtronger denial.

Note 3d, If the mere negative term *not* be added to the copula of an *univerſal affirmative propoſition*, it reduces it to a *particular negative*; as, *All men are not wiſe*, ſignifies the ſame as, *Some men are not wiſe*.

Note 4th, In all *affirmative* propoſitions, the predicate is taken in its whole comprehenſion; that is, every eſſential part and attribute of it is affirmed concerning the ſubject; as when I ſay, *A true Chriſtian is an honeſt man*, every thing that belongs to *honeſty* is affirmed concerning a *true Chriſtian*.

Note 5th, In all negative propoſitions the predicate is taken in its whole extenſion; that is, every ſpecies and individual that is contained in the general idea of the predicate, is utterly denied concerning the ſubject: So in this propoſition, *A ſpirit is not an animal*, we exclude all ſorts and kinds and particular animals whatſoever from the idea of a *ſpirit*.

From theſe two laſt remarks we may derive this inference, that we ought to attend to the *entire comprehenſion* of our ideas, and to the *univerſal extenſion* of them, as far as we

we have proper capacity for it, before we grow too confident in our affirming or denying any thing which may have the leaſt darkneſs, doubt or difficulty attending it: It is the want of this attention that betrays us into many miſtakes.

SECT. III.

Of the Oppoſition and Converſion of Propoſitions.

ANY two ideas being joined or disjoined in various forms, will afford us ſeveral propoſitions. All theſe may be diſtinguiſhed according to their *quantity* and their *quality** into four, which are marked or denoted by the letters, A, E, I, O, thus:

A, E, I, O } denotes a {
- Univerſal affirmative.
- Univerſal negative.
- Particular affirmative.
- Particular negative.

according to theſe old Latin rhimes——

Aſſerit A, *negat* E, *verum generaliter ambæ.*
Aſſerit I, *negat* O, *ſed particuluriter ambo*

This may be exemplified by theſe two ideas, a *vine* and a *tree.*

A *Every vine is a tree.*
E *No vine is a tree.*
I *Some vine is a tree.*
O *Some vine is not a tree.*

The logicians of the ſchools have written many large trifles concerning the *oppoſition* and *converſion* of *propoſitions.* It will be ſufficient here to give a few brief hints of theſe things, that the learner may not be utterly ignorant of them.

Propoſitions which are made of the ſame ſubject and predicate, are ſaid to be *oppoſite*, when that which is denied in one is affirmed in the other, either in whole or in part, without any conſideration whether the propoſitions be true or no.

If

* The reader ſhould remember here, that a propoſition according to its *quantity* is called *univerſal* or *particular*; and according to its *quality*, it is either *affirmative* or *negative.*

If they differ both in quantity and quality, they are called *contradictory*; as,

A *Every vine is a tree.*
O *Some vine is not a tree.*
} These can never be both true or both false at the same time.

If two universals differ in quality, they are *contraries*; as,

A *Every vine is a tree.*
E *No vine is a tree.*
} These can never be both true together, but they may be both false.

If two *particular* propositions differ in quality, they are *subcontraries*; as,

I *Some vine is a tree.*
O *Some vine is not a tree.*
} These may be both true together, but they can never be both false.

Both *particular* and *universal* propositions, which agree in quality, but not in quantity, are called *subaltern*, though these are not properly *opposite*, as,

A *Every vine is a tree.*
I *Some vine is a tree.*

Or thus:

E *No vine is a tree.*
O *Some vine is not a tree.*

The canons of *subaltern propositions* are usually reckoned these three; namely, (1) If an *universal* proposition be true, the particular will be true also, but not on the contrary. And, (2) If a *particular* proposition be false, the *universal* must be false too, but not on the contrary. (3.) *Subaltern propositions*, whether universal or particular, may sometimes be both true, and sometimes both false.

The *conversion of propositions*, is when the subject and predicate change their places with preservation of the truth. This may be done with constant certainty in all *universal negatives* and *particular affirmatives*; as, *No spirit is an animal*, may be converted, *No animal is a spirit*: and, *Some tree is a vine*, may be converted, *Some vine is a tree.* But there is more of formal trifling in this sort of discourse than there is of solid improvement, because this sort of

conversion

converſion ariſes merely from the *form of words*, as connected in a propoſition, rather than from the *matter*.

Yet it may be uſeful to obſerve, that there are ſome propoſitions, which, by reaſon of the *ideas* or *matter* of which they are compoſed, may be converted with conſtant truth: Such are thoſe propoſitions whoſe predicate is a *nominal* or *real* definition of the ſubject, or the difference of it, or a property of the fourth kind, or a ſuperlative degree of any property or quality whatſoever; or, in ſhort, whereſoever the predicate and the ſubject have exactly the ſame extenſion, or the ſame comprehenſion; as, *Every vine is a tree bearing grapes;* and, *Every tree bearing grapes is a vine: Religion is the trueſt wiſdom;* and, *The trueſt wiſdom is religion: Julius Cæſar was the firſt emperor of Rome;* and, *The firſt emperor of Rome was Julius Cæſar.* Theſe are the propoſitions which are properly convertible, and they are called *reciprocal propoſitions*.

SECT. IV.

Of Pure and Modal Propoſitions.

ANOTHER diviſion of propoſitions among the ſcholaſtic writers is into *pure* and *modal*. This may be called (for diſtinction ſake) a diviſion *according* to the predicate.

When a propoſition merely expreſſes that the predicate is connected with the ſubject, it is called a *pure propoſition*; as, *Every true Chriſtian is an honeſt man.* But, when it alſo includes the *way* and *manner* wherein the predicate is connected with the ſubject, it is called a *modal propoſition;* as when I ſay, *It is neceſſary that a true Chriſtian ſhould be an honeſt man.*

Logical writers generally make the *modality* of this propoſition to belong to the *copula*, becauſe it ſhews the *manner* of the connection between the ſubject and predicate. But, if the *form* of the ſentence as a *logical* propoſition be duly conſidered, the *mode* itſelf is the very predicate of the propoſition, and it muſt run thus: *That a true Chriſtian ſhould be an honeſt man is a neceſſary thing*, and then the whole *primary* propoſition is included in the ſubject of the *modal* propoſition.

There-

There are *four modes* of connecting the predicate with the subject, which are usually reckoned up on this occasion, namely, *neceſſity* and *contingency*, which are two oppoſites: *poſſibility* and *impoſſibility*, which are alſo oppoſites; as, *It is neceſſary that a globe ſhould be round: That a globe be made of wood or glaſs, is an unneceſſary or contingent thing: It is impoſſible that a globe ſhould be ſquare: It is poſſible that a globe may be made of water.*

With regard to the *modal propoſitions* which the ſchools have introduced, I would make theſe two remarks.

Remark 1. Theſe propoſitions in Engliſh are formed by the reſolution of the words, *muſt be*, *might not be*, *can be*, and *cannot be*, into thoſe more explicate forms of a logical copula and predicate, *is neceſſary*, *is contingent*, *is poſſible*, *is impoſſible*: For *it is neceſſary that a globe ſhould be round*, ſignifies no more than that *a globe muſt be round*.

Remark 2. Let it be noted, that this quadruple *modality* is only an enumeration of the *natural modes* or manners wherein the predicate is connected with the ſubject: We might alſo deſcribe ſeveral *moral* and *civil modes* of connecting two ideas together, namely, *lawfulneſs* and *unlawfulneſs*, *convenience* and *inconvenience*, &c. whence we may form ſuch *modal propoſitions* as theſe: *It is unlawful for any perſon to kill an innocent man. It is unlawful for Chriſtians to eat fleſh in Lent: To tell all that we think is inexpedient: For a man to be affable to his neighbour is very convenient*, &c.

There are ſeveral other *modes* of ſpeaking whereby a predicate is connected with a ſubject: Such as, *it is certain, it is doubtful, it is probable, it is improbable, it is agreed, it is granted, it is ſaid by the ancients, it is written*, &c. all which will form other kinds of *modal propoſitions*.

But, whether the *modality* be *natural*, *moral*, &c. yet in all theſe propoſitions it is the *mode* is the *proper predicate*, and all the reſt of the propoſition, except the *copula* (or word *is*), belongs to the *ſubject*; and thus they become *pure propoſitions* of a *complex* nature, of which we ſhall treat in the next ſection; ſo that there is no great need of making *modals* of a diſtinct ſort.

There are many little ſubtilties which the ſchools acquaint us with concerning the *converſion* and *oppoſition* and *equipollence* of theſe modal propoſitions, ſuited to the Latin.

in or Greek tongues, rather than the Engliſh, and fit to paſs away the idle time of a ſtudent, rather than to enrich his underſtanding.

SECT. V.

Of ſingle Propoſitions, *whether Simple or Complex.*

WHEN we conſider the *nature of propoſitions*, together with the *formation* of them, and divide the *materials* whereof they are made, we divide them into *ſingle* and *compound*.

A *ſingle propoſition*, is that which has but one ſubject and one predicate; but if it has more ſubjects or more predicates, it is called a *compound propoſition*, and indeed it contains two or more propoſitions in it.

A *ſingle* propoſition (which is alſo called *categorical*) may be divided again into *ſimple* and *complex**.

A *purely ſimple propoſition* is that whoſe ſubject and predicate are made up of ſingle terms; as *Virtue is deſirable*: *Every penitent is pardoned*: *No man is innocent*.

When the ſubject or predicate, or both, are made up of complex terms, it is called a *complex propoſition*; as, *Every ſincere penitent is pardoned*: *Virtue is deſirable for its own ſake*: *No man alive is perfectly innocent*.

If the term which is added to the ſubject of a complex propoſition be either eſſential or any way neceſſary to it, then it is called *explicative*, for it only explains the ſubject: as, *Every mortal man is a ſon of Adam*. But, if the term added to make up the complex ſubject does not neceſſarily or conſtantly belong to it, then it is *determinative*, and limits the ſubject to a particular part of its extenſion; as, *Every pious man ſhall be happy*. In the firſt propoſition the word *mortal* is merely explicative: In the ſecond propoſition the word *pious* is determinative.

Here

* As *ſimple* ideas are oppoſed to *complex*, and *ſingle* ideas to *compound*, ſo propoſitions are diſtinguiſhed in the ſame manner: The Engliſh tongue, in this reſpect, having ſome advantage above the learned languages, which have no uſual word to diſtinguiſh *ſingle* from *ſimple*.

Here note, that whatſoever may be affirmed or denied concerning any ſubject, with an explicative addition, may be alſo affirmed or denied of that ſubject without it; as we may boldly ſay, Every man is a ſon of Adam, as well as every mortal man: But it is not ſo, were the addition is determinative, for we cannot ſay, Every man ſhall be happy, though every pious man ſhall be ſo.

In a complex propoſition, the predicate or ſubject is ſometimes made complex by the pronouns who, which, whoſe, to whom, &c. which make another propoſition; as Every man who is pious ſhall be ſaved: Julius, whoſe ſirname was Cæſar, overcame Pompey: Bodies, which are tranſparent, have many pores. Here the whole propoſition is called the primary or chief, and the additional propoſition is called an incident propoſition. But it is ſtill to be eſteemed in this caſe merely as a part of the complex term; and the truth or falſhood of the whole complex propoſition is not to be judged by the truth or falſhood of the incident propoſition, but by the connection of the whole ſubject with the predicate. For the incident propoſition may be falſe, and abſurd, or impoſſible, and yet the whole complex propoſition may be true; as, A horſe which has wings might fly over the Thames.

Beſide this complexion which belongs to the ſubject or predicate, logical writers uſe to ſay, there is a complexion which may fall upon the copula alſo: But this I have accounted for in the ſection concerning modal propoſitions; and indeed it is not of much importance whether it were placed there or here.

SECT. VI.

Of Compound Propoſitions.

A COMPOUND propoſition is made up of two or more ſubjects or predicates, or both; and it contains in it two or more propoſitions, which are either plainly expreſſed, or concealed and implied.

The firſt ſort of compound propoſitions are thoſe wherein the compoſition is expreſſed and evident, and they are diſtinguiſhed into theſe ſix kinds, namely, copulative, diſjunctive, conditional, cauſal, relative and diſcretive.

I. Copulative

I. Copulative propositions, are those which have more subjects or predicates connected by affirmative or negative conjunctions; as, *Riches and honour are temptations to pride*: *Cæsar conquered the Gauls and the Britons*: *Neither gold or jewels will purchase immortality.* These propositions are evidently compounded, for each of them may be resolved into two propositions, namely, *Riches are temptations to pride*; and *Honour is a temptation to pride*; and so the rest.

The truth of copulative propositions depends upon the truth of all the parts of them; for, if Cæsar had conquered the Gauls, and not the Britons, or the Britons, and not the Gauls, the second copulative proposition had not been true.

Here note, Those propositions, which cannot be resolved into two or more simple propositions, are not properly copulative, though two or more ideas be connected and coupled by such conjunctions, either in the subject or predicate; as *Two and three make five*: *Majesty and meekness do not often meet*: *The sun, moon, and stars, are not all to be seen at once.* Such propositions are to be esteemed merely complex, because the predicate cannot be affirmed of each single subject, but only of all of them together as a collective subject.

II. *Disjunctive propositions*, are when the parts are disjoined or opposed to one another by disjunctive particles; as, *It is either day or night*: *The weather is* either *shining* or *rainy*: *Quantity is* either *length*, *breadth* or *depth*.

The truth of *disjunctives* depends on the necessary and immediate opposition of the parts; therefore only the last of these examples is true; but the two first are not strictly true, because *twilight* is a medium between *day* and *night*; and *dry cloudy weather* is a medium between *shining* and *raining*.

III. *Conditional* or *hypothetical propositions*, are those whose parts are united by the conditional particle *if*; as, If *the sun be fixed, the earth must move*: If *there be no fire, there will be no smoke*.

Note, The first part of these propositions, or that wherein the conditional is contained, is called the *antecedent*, the other is called the *consequent*.

The truth of these propositions depends not at all on

the truth or falſhood of their two parts, but on the truth of the *connection* of them; for each part of them may be falſe, and yet the whole propoſition true; as, *If there be no providence, there will be no future puniſhment.*

IV. *Cauſal propoſitions*, are where two propoſitions are joined by cauſal particles; as, *Houſes were not built that they might be deſtroyed: Rehoboam was unhappy* becauſe *he followed evil counſel.*

The truth of a *cauſal propoſition* ariſes not from the truth of the parts, but from the *cauſal influence* that the one part has upon the other; for both parts may be true, yet the propoſition falſe, if one part be not the cauſe of the other.

Some logicians refer *reduplicate propoſitions* to this place, as *Men, conſidered as men, are rational creatures*, that is, becauſe *they are men.*

V. *Relative propoſitions* have their parts joined by ſuch particles as expreſs a relation or compariſon of one thing to another: as, *When you are ſilent I will ſpeak: As much as you are worth, ſo much ſhall you be eſteemed: As is the father, ſo is the ſon: Where there is no tale-bearer, contention will ceaſe.*

Theſe are very much akin to *conditional* propoſitions, and the truth of them depends upon the juſtneſs of their *connection.*

VI. *Diſcretive propoſitions* are ſuch wherein various and ſeemingly oppoſite judgments are made, whoſe variety or diſtinction is noted by the particles, *but, though, yet, &c.* as *Travellers may change their climate, but not their temper; Job was patient, though his grief was great.*

The truth and goodneſs of a *diſcretive propoſition* depends on the truth of both parts, and their contradiſtinction to one another; for, though both parts ſhould be true, yet if there be no ſeeming oppoſition between them, it is an uſeleſs aſſertion, though we cannot call it a falſe one; as, *Deſcartes was a philoſopher, yet he was a Frenchman: The Romans were valiant, but they ſpoke Latin;* both which propoſitions are ridiculous, for want of a ſeeming oppoſition between the parts.

Since we have declared wherein the *truth* and *falſhood* of theſe *compound propoſitions* conſiſt, it is proper alſo to give ſome intimations how any of theſe propoſitions, when they are falſe, may be *oppoſed* or *contradicted.*

All

All compound propositions, except *copulatives* and *discretives*, are properly denied or contradicted when the negation affects their conjunctive particles; as, if the disjunctive proposition asserts, *It is either day or night*; the opponent says, *It is not either day or night*; or, *It is not necessary that it should be either day or night*: so the *hypothetical* proposition is denied, by saying, *It does not follow that the earth must move if the sun be fixt.*

A *disjunctive proposition* may be contradicted also by denying all the parts; as, *It is neither day nor night.*

And a *causal proposition* may be denied or opposed *indirectly* and *improperly*, when either part of the proposition is denied; and it must be false if either part be false: But the design of the proposition being to shew the *causal connection* of the two parts, each part is supposed to be true, and it is not properly contradicted as a *causal proposition*, unless one part of it be denied to be the cause of the other.

As for *copulatives* and *discretives*, because their truth depends more on the truth of their parts, therefore these may be opposed or denied, as many ways as the parts of which they are composed may be denied; so this copulative proposition, *Riches and honour are temptations to pride*, may be denied by saying, *Riches are not temptations, though honour may be*: or, *Honour is not a temptation, though riches may be*; or, *Neither riches nor honour are temptations*, &c.

So this *discretive* proposition, *Job was patient, though his grief was great*, is denied by saying, *Job was not patient, though his grief was great*: or, *Job was patient, but his grief was not great*: or, *Job was not patient, nor was his grief great.*

We proceed now to the *second sort* of *compound* propositions, namely, such *whose composition is not expressed, but latent or concealed*; yet a small attention will find two propositions included in them. Such are these that follow.

1. Exclusives; as, *The pious man alone is happy. It is only Sir Isaac Newton could find out true philosophy.*

2. Exceptives; as, *None of the ancients but Plato well defended the soul's immortality. The Protestants worship none but God.*

3. Comparatives; as, *Pain is the greatest affliction. No Turk was fiercer than the Spaniards at Mexico.*

Here

Here *note*, That the *comparative* degree does not always imply the *positive*; as, if I say, *A fool is better than a knave*, this does not affirm that *folly is good*, but that it is a *less evil* than knavery.

4. *Inceptives* and *desitives*, which relate to the beginning or ending of any thing; as, *The Latin tongue is not yet forgotten. No man before Orpheus wrote Greek verse. Peter Czar of Muscovy began to civilize his nation.*

To these may be added *continuatives*; as, *Rome remains to this day*, which includes at least two propositions, namely, *Rome was*, and *Rome is*.

Here let other authors spend time and pains in giving the precise definitions in all these sorts of propositions which may be as well understood by their names and examples: Here let them tell what their truth depends upon, and how they are to be opposed or contradicted; but a moderate share of common sense, with a review of what is said on the former *compounds*, will suffice for all these purposes, without the formality of rules.

SECT. VII.

Of True and False Propositions.

PROPOSITIONS are next to be considered according to their *sense* or *signification*, and thus they are distributed into *true* and *false*. A *true proposition* represents things as they are in themselves; but, if things are represented otherwise than they are in themselves, the proposition is *false*.

Or we may describe them more particularly thus: a *true proposition* joins those ideas and terms together whose objects are joined and agree; or it disjoins those ideas and terms whose objects disagree, or are disjoined; as, *Every bird has wings: A brute is not immortal.*

A *false proposition* joins those ideas or terms whose objects disagree, or it disjoins those whose objects agree; as, *Birds have no wings: Brutes are immortal.*

Note, It is impossible that the same proposition should be both true and false at the same time, in the same sense, and in the same respect; because a proposition is but the

representation

representation of the agreement or disagreement of things: Now *it is impossible that the same thing should be and not be*, or *that the same thing should agree and not agree, at the same time, and in the same respect*. This is a first principle of human knowledge.

Yet some propositions may seem to contradict one another, though they may be both true, but in different senses, or respects, or times; as, *Man was immortal in paradise*, and *Man was mortal in paradise*. But these two propositions must be referred to different times; as, Man *before his fall* was immortal, but *at the fall* he became mortal. So we may say now, *Man is mortal*, or *man is immortal*, if we take these propositions in different respects; as *Man is* an immortal creature *as to his soul*, but mortal *as to his body*. A great variety of difficulties and seeming contradictions, both in Holy Scripture, and other writings, may be solved and explained in this manner.

The most important question on this subject is this, *What is the criterion, or distinguishing mark of truth?* How shall we know when a proposition is really true or false? There are so many disguises of truth in the world, so many false appearances of truth, that some sects have declared there is no possibility of distinguishing *truth* from *falsehood*; and therefore they have abandoned all pretences to knowledge, and maintain strenuously that *nothing is to be known*.

The first men of this humour made themselves famous in Greece by the name of *sceptics*, that is, *seekers*. They were also called *academics*, borrowing their name from *academia*, their school or place of study. They taught that *all things are uncertain*, though they allowed that some are more probable than others. After these arose the sect of *Pyrrhonics*, so named from *Pyrrho* their master, who would not allow one proposition to be more probable than another; but professed that *all things were equally uncertain*. Now all these men (as an ingenious author expresses it) were rather to be called a sect of *liars* than *philosophers*, and that censure is just for two reasons: (1.) Because they determined concerning every proposition that *it was uncertain*, and believed that as a certain truth, while they professed *there was nothing certain*, and that no-

thing could be determined concerning truth or falſhood; and thus their very doctrine gave itſelf the lie. (2.) Becauſe they judged and acted as other men did in the common affairs of life; they would neither run into fire nor water, though they profeſſed ignorance and uncertainty, whether the one would burn, or the other drown them.

There have been ſome in all ages who have too much affected this humour, who diſpute againſt every thing, under pretence that *truth has no certain mark to diſtinguiſh it.* Let us therefore inquire *what is the general criterion of truth?* And, in order to this, it is proper to conſider what is the reaſon why we aſſent to thoſe propoſitions which contain the moſt certain and indubitable truths, ſuch as theſe, *The whole is greater than a part; Two and three make five.*

The only reaſon why we believe theſe propoſitions to be true, is becauſe the ideas of the ſubjects and predicates appear with ſo much clearneſs and ſtrength of evidence to agree to each other, that the mind cannot help diſcerning the agreement, and cannot doubt of the truth of them, but is conſtrained to judge them true. So, when we compare the ideas of a *circle* and a *triangle*, or the ideas of an *oyſter* and a *butterfly*, we ſee ſuch an evident diſagreement between them, that we are ſure that a *butterfly is not an oyſter*, nor is a *triangle a circle.* There is nothing but the evidence of the agreement or diſagreement between two ideas that makes us affirm or deny the one or the other.

Now it will follow from hence, that a *clear and diſtinct perception or full evidence of the agreement and diſagreement of our ideas to one another, or to things*, is a certain criterion of truth: For, ſince our minds are of ſuch a make, that where the evidence is exceeding plain and ſtrong, we cannot withhold our aſſent; we ſhould then be neceſſarily expoſed to believe falſhood, if complete evidence ſhould be found in any propoſitions that are not true. But ſurely the God of perfect wiſdom, truth and goodneſs, would never oblige his creatures to be thus deceived; and therefore he would never have conſtituted us of ſuch a frame as would render it naturally impoſſible to guard againſt error.

Another conſequence is naturally derived from the former,

mer, and that is, that the only reason why we fall into mistake, is because we are impatient to form a judgment of things before we have a clear and evident perception of their agreement or disagreement; and, if we will make haste to judge while our ideas are obscure and confused, or before we see whether they agree or disagree, we shall plunge ourselves into perpetual errors. See more on this subject in an *Essay on the Freedom of will in God and Man*, published in 1732, section 1. page 13.

Note, What is here asserted concerning the necessity of clear and distinct ideas, refers chiefly to propositions which we form *ourselves* by our own powers: As for propositions which we derive from the testimony of others, they will be accounted for in Chap. IV.

SECT. VIII.

Of Certain and Dubious Propositions of Knowledge and Opinion.

SINCE we have found that evidence is the great criterion, and the sure mark of truth, this leads us directly to consider propositions according to their evidence; and here we must take notice both of the different degrees of evidence, and the different kinds of it.

Propositions, according to their different degrees of evidence, are distinguished into certain and dubious*.

Where the evidence of the agreement or disagreement of the ideas is so strong and plain, that we cannot forbid nor delay our assent, the proposition is called *certain*; as, *Every circle hath a centre*; *The world did not create itself*. An

* It may be objected, that this certainty and uncertainty being only in the mind, the division belongs to propositions rather according to the degrees of our assent, than the degrees of evidence. But it may be well answered, that the evidence here intended is that which appears so to the mind, and not the mere evidence in the nature of things. Besides, (as we shall shew immediately,) the degree of assent ought to be exactly proportionable to the degree of evidence: And therefore the difference is not great, whether propositions be called certain or uncertain, according to the measure of evidence, or of assent.

An assent to such propositions is honoured with the name of *knowledge*.

But, when there is any obscurity upon the agreement or disagreement of the ideas, so that the mind does not clearly perceive it, and is not compelled to assent or dissent, then the proposition, in a proper and philosophical sense, is called doubtful or *uncertain*; as, *The planets are inhabited; The souls of brutes are mere matter; The world will not stand a thousand years longer; Dido built the city of Carthage*, &c. Such *uncertain* propositions are called *opinions*.

When we consider ourselves as philosophers, or *searchers after truth*, it would be well if we always suspended a full judgment or determination about any thing, and made farther inquiries, where this plain and *perfect evidence* is wanting; but we are so prone of ourselves to judge without full evidence, and in some cases the necessity of action in the affairs of life constrains us to judge and determine upon a tolerable *degree* of evidence, that we vulgarly call those propositions *certain*, where we have but very little room or reason to doubt of them, though the evidence be not complete and resistless.

Certainty, according to the schools, is distinguished into *objective* and *subjective*. *Objective certainty*, is when the proposition is certainly true in itself; and *subjective*, when we are certain of the truth of it. The one is in *things*, the other is in our *minds*.

But let it be observed here, that every proposition in itself is certainly true or certainly false. For, though doubtfulness or uncertainty seems to be a medium between certain truth and certain falshood in our minds, yet there is no such medium in things themselves, no, not even in future events: For now at this time it is certain in itself, that midsummer-day seven years hence will be serene, or it is certain it *will be cloudy*, tho' we are uncertain and utterly ignorant what sort of day it will be: This certainty of distant futurities is known to God only.

Uncertain or dubious propositions, that is, opinions, are distinguished into probable, or improbable.

When the evidence of any proposition is greater than the evidence of the contrary, then it is a probable opinion:

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Where the evidence and arguments are ſtranger on the contrary ſide, we call it improbable. But, while the arguments on either ſide ſeem to be equally ſtrong, and the evidence for and againſt any propoſition appears equal to the mind, then in common language we call it a doubtful matter. We alſo call it a dubious or doubtful propoſition, when there are no arguments on either ſide, as, Next Chriſtmas-day will be a very ſharp froſt. And in general, all thoſe propoſitions are doubtful, wherein we can perceive no ſufficient marks or evidences of truth or falſhood. In ſuch a caſe, the mind which is ſearching for truth ought to remain in a ſtate of doubt or ſuſpenſe, until ſuperior evidence on one ſide or the other incline the balance of the judgment, and determine the probability or certainty to the one ſide.

A great many propoſitions which we generally believe or miſbelieve in human affairs, or in the ſciences, have very various degrees of evidence, which yet ariſe not to complete *certainty*, either of truth or falſhood. Thus it comes to paſs that there are ſuch various and almoſt infinite degrees of probability and improbability. To a weak probability we ſhould give a weak aſſent; and a ſtronger aſſent is due where the evidence is greater, and the matter more probable. If we proportion our aſſent in all things to the degrees of evidence, we do the utmoſt that human nature is capable of in a rational way to ſecure itſelf from error.

SECT. IX.

Of Senſe, Conſciouſneſs, Intelligence, Reaſon, Faith, and Inſpiration.

AFTER we have conſidered the *evidence* of propoſitions in the various degrees of it, we come to ſurvey the ſeveral kinds of evidence, or the different ways whereby truth is let into the mind, and which produce accordingly ſeveral kinds of knowledge. We ſhall diſtribute them into theſe ſix; namely, Senſe, Conſciouſneſs, Intelligence, Reaſon, Faith, and Inſpiration; and then diſtinguiſh the propoſitions, which are derived from them.

I.

I. The evidence of ſenſe is, when we frame a propoſition according to the dictates of any of our ſenſes; ſo we judge that graſs is green; that a trumpet gives a pleaſant ſound; that fire burns wood; water is ſoft, and iron is hard; for we have ſeen, heard or felt all theſe. It is upon this evidence of ſenſe, that we know and believe the daily occurrences in human life; and almoſt all the hiſtories of mankind, that are written by eye or ear witneſſes, are built upon this principle.

Under the evidence of ſenſe we do not only include that knowledge which is derived to us by our outward ſenſes of hearing, ſeeing, feeling, taſting, and ſmelling; but that alſo which is derived from the inward ſenſations and appetites of hunger, thirſt, eaſe, pleaſure, pain, wearineſs, reſt, &c. and all thoſe things which belong to the body; as *Hunger is a painful appetite; Light is pleaſant; Reſt is ſweet to the weary limbs.*

Propoſitions which are built on this evidence, may be named ſenſible propoſitions, or the dictates of ſenſe.

II. As we learn what belongs to the body by the evidence of ſenſe, ſo we learn what belongs to the ſoul by an inward conſciouſneſs, which may be called a ſort of internal feeling, or ſpiritual ſenſation of what paſſes in the mind; as, I think before I ſpeak; I deſire large knowledge; I ſuſpect my own practice; I ſtudied hard to-day; My conſcience bears witneſs of my ſincerity; My ſoul hates vain thoughts; Fear is an eaſy paſſion; Long meditation on one thing is tireſome.

Thus it appears that we obtain the knowledge of a multitude of propoſitions, as well as of ſingle ideas, by thoſe two principles which Mr. Locke calls ſenſation and reflection: One of them is a ſort of conſciouſneſs of what affects the body, and the other is a conſciouſneſs of what paſſes in the mind.

Propoſitions which are built on this internal conſciouſneſs, have yet no particular or diſtinguiſhing name aſſigned to them.

III. Intelligence relate chiefly to thoſe abſtracted propoſitions which carry their own evidence with them, and admit no doubt about them. Our perception of this ſelf-evidence in any propoſition is called intelligence. It is

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our knowledge of those first principles of truth which are, as it were, wrought into the very nature and make of our minds: They are so evident in themselves to every man who attends to them, that they need no proof. It is the prerogative and peculiar excellence of these propositions that they can scarce either be proved or denied: They cannot easily be proved, because there is nothing supposed to be more clear or certain, from which an argument may be drawn to prove them. They cannot well be denied, because their own evidence is so bright and convincing, that as soon as the terms are understood the mind necessarily assents; such are these, Whatsoever acteth hath a being; Nothing has no properties; A part is less than the whole; Nothing can be the cause of itself.

These propositions are called axioms, or maxims, or first principles; these are the very foundations of all improved knowledge and reasonings, and on that account these have been thought to be intimate propositions, or truths born with us.

Some suppose that a great part of the knowledge of angels and human souls in the separate state is obtained in this manner, namely, by such an immediate view of things in their own nature, which is called intuition.

IV. Reasoning is the next sort of evidence, and that is, when one truth is inferred or drawn from others by natural and just methods of argument; as, if there be much light at midnight, I infer, it proceeds from the moon; because the sun is under the earth.* If I see a cottage in a forest, I conclude, some man has been there and built it. Or when I survey the heavens and earth, this gives evidence to my reason, that there is a God who made them.

The propositions which I believe upon this kind of evidence, are called conclusions, or rational truths; and the knowledge that we gain this way is properly called science.

Yet let it be noted, that the word science is usually applied to a whole body of regular and methodical observations

* Note, Since this book was written, we have had so many appearances of the aurora borealis as reduces this inference only to a probability.

tions or propositions, which learned men have formed concerning any subject of speculation, deriving one truth from another by a train of arguments. If this knowledge chiefly directs our practice, it is usually called an art. And this is the most remarkable distinction between an art and a science, namely, the one refers chiefly to practice, the other to speculation. Natural philosophy, or physics, and ontology, are sciences; logic and rhetoric are called arts; but mathematics include both art and science: for they have much of speculation, and much of practice in them.

Observe here, That, when the evidence of a proposition derived from sense, consciousness, intelligence, or reason, is firm and indubitable, it produces such assent as we call a natural certainty.

V. When we derive the evidence of any proposition from the testimony of others, it is called the evidence of faith; and this is a large part of our knowledge. Ten thousand things there are which we believe merely upon the authority or credit of those who have spoken or written of them. It is by this evidence that we know there is such a country as China, and there was such a man as Cicero who dwelt in Rome. It is by this that most of the transactions in human life are managed: We know our parents and our kindred by this means; we know the persons and laws of our present governors, as well as things that are at a vast distance from us in foreign nations, or in ancient ages.

According as the persons that inform us of any thing are many or few, or more or less wise, and faithful, and credible, so our faith is more or less firm or wavering, and the proposition believed is either certain or doubtful; but in matters of faith, an exceeding great probability is called a moral certainty.

Faith is generally distinguished into divine and human, not with regard to the propositions that are believed, but with regard to the testimony upon which we believe them. When God reveals any thing to us, this gives us the evidence of divine faith; but what man only acquaints us with, produces a human faith in us; the one being built upon the word of man, arises but to moral certainty; but the other being founded on the word

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of God, arises to an absolute and infallible assurance, so far as we understand the meaning of this word. This is called supernatural certainty.

Propositions which we believe upon the evidence of human testimony are called narratives, relations, reports, historical observations, &c. but such as are built on divine testimony, are termed matters of revelation; and, if they are of great importance in religion, they are called articles of faith.

There are some propositions or parts of knowledge, which are said to be derived from observation and experience, that is experience in ourselves, and the observations we have made on other persons or things; but these are made up of some of the former springs of knowledge joined together, namely, sense, consciousness, reason, faith, &c. and therefore are not reckoned a distinct kind of evidence.

VI. Inspiration is a sort of evidence distinct from all the former, and that is, when such an overpowering impression of any proposition is made upon the mind by God himself, that gives a convincing and indubitable evidence of the truth and divinity of it: So were the prophets and the apostles inspired*.

Sometimes God may have been pleased to make use of the outward senses, or the inward workings of the imagination, of dreams, apparitions, visions, and voices, or reasoning, or perhaps human narration, to convey divine truths to the mind of the prophet; but none of these would be sufficient to deserve the name of inspiration, without a superior or divine light and power attending them.

This sort of evidence is also very distinct from what we usually call divine faith; for every common Christian exercises divine faith when he believes any proposition which God has revealed in the bible upon this account, because God has said it, though it was by a train of reasonings that he was led to believe that this is the word of God. Whereas in the case of inspiration, the prophet not only exercises divine faith in believing what God reveals, but he is under a superior heavenly impression, light and evi-

*Note here, I speak chiefly of the highest kind of inspiration.

dence, whereby he is assured that God reveals it. This is the most eminent kind of supernatural certainty.

Though persons might be assured of their own inspiration, by some peculiar and inexpressible consciousness of this divine inspiration and evidence in their own spirits, yet it is hard to make out this inspiration to others, and to convince them of it, except by some antecedent or consequent prophecies or miracles, or some public appearances more than human.

The propositions which are attained by this sort of evidence are called inspired truths. This is divine revelation at first hand, and the dictates of God in an immediate manner, of which theological writers discourse at large: But since it belongs only to a few favorites of heaven to be inspired, and not the bulk of mankind, it is not necessary to speak more of it in a treatise of logic, which is designed for the general improvement of human reason.

The various kinds of evidence upon which we believe any proposition, afford us these three remarks:

Remark I. The same proposition may be known to us by the different kinds of evidence: That the whole is bigger than a part, is known by our senses, and it is known by the self-evidence of the thing to our mind. That God created the heavens and the earth is known to us by reason, and is known also by divine testimony or faith.

Remark II. Among those various kinds of evidence, some are generally stronger than others in their own nature, and give a better ground for certainty. Inward consciousness and intelligence, as well as divine faith and inspiration, usually carry much more force with them than sense or human faith, which are often fallible; though there are instances wherein human faith, sense and reasoning, lay a foundation also for complete assurance, and leave no room for doubt.

Reason in its own nature would always lead us into the truth in matters within its compass, if it were used aright, or it would require us to suspend our judgment where there is a want of evidence. But it is our sloth, precipitancy, sense, passion, and many other things, that lead our reason astray in this degenerate and imperfect state: Hence it comes to pass that we are guilty of so many errors in reasoning,

reasoning, especially about divine things, because our reason either is busy to inquire, and resolved to determine about matters that are above our present reach; or because we mingle many prejudices and secret influences of sense, fancy, passion, inclination, &c. with our exercises of reason, and judge and determine according to their irregular instances.

Divine faith would never admit of any controversies or doubtings, if we were but assured that God had spoken, and that we rightly understood his meaning.

Remark III. The greatest evidence and certainty of any proposition does not depend on the variety of the ways or kinds of evidence whereby it is known, but rather upon the strength and degree of evidence, and the clearness of that light in or by which it appears to the mind. For a proposition that is known only one way may be much more certain, and have stronger evidence, than another that is supposed to be known many ways. Therefore these propositions, Nothing has no properties; Nothing can make itself; which are known only by intelligence, are much surer than this proposition, The rainbow has real and inherent colours in it; or than this, The sun rolls round the earth; though we seem to know both these last by our senses, and by the common testimony of our neighbours. So any proposition that is clearly evident to our own *consciousness* or *divine faith*, is much more certain to us than a thousand others that have only the evidence of feeble and obscure sensations of mere probable reasonings and doubtful arguments, or the *witness* of fallible *men*, or even though all these should join together.

CHAP. III.

The Springs of false Judgment, or the Doctrine of Prejudices.

Introduction.

In the end of the foregoing chapter, we have surveyed the several sorts of evidence on which we build our assent

assent to propositions. These are indeed the general grounds upon which we form our judgments concerning things. What remains in this SECOND PART OF LOGIC is to point out the several springs and causes of our mistakes in judging, and to lay down some rules by which we should conduct ourselves in passing a judgment upon every thing that is proposed to us.

I confess many things which will be mentioned in these following chapters, might be as well referred to the THIRD PART OF LOGIC, where we shall treat of Reasoning and argument; for most of our false judgments seem to include a secret bad reasoning in them; and while we shew the springs of error, and the rules of true judgment, we do at the same time discover which arguments are fallacious, which reasonings are weak, and which are just and strong. Yet since this is usually called a judging ill, or judging well, I think we may without any impropriety treat of it here; and this will lay a surer foundation for all sorts of ratiocination and argument.

Rash judgments are called prejudices, and so are the springs of them. This word in common life signifies an ill opinion which we have conceived of some other person, or some injury done to him. But when we use the word in matters of science, it signifies a judgment that is formed concerning any person or thing before sufficient examination; and generally we suppose it to mean a false judgment or mistake: At least, it is an opinion taken up without solid reason for it, or an assent given to a proposition before we have just evidence of the truth of it, though the thing itself may happen to be true.

Sometimes these rash judgments are called prepossessions; whereby is meant, that some particular opinion has possessed the mind, and engaged the assent, without sufficient search or evidence of the truth of it.

There is a vast variety of these prejudices and prepossessions which attend mankind in every age and condition of life; they lay the foundations of many an error, and many an unhappy practice, both in the affairs of religion, and in our civil concernments; as well as in matters of learning. It is necessary for a man who pursues truth to inquire into these springs of error, that as far as possible he

he may rid himself of old prejudices, and watch hourly against new ones.

The number of them is so great, and they are so interwoven with each other, as well as with the powers of human nature, that it is sometimes hard to distinguish them apart; yet for method's sake we shall reduce them to these four general heads, namely, prejudices arising from things, or from words, from ourselves, or from other persons; and, after the description of each prejudice, we shall propose one or more ways of curing it.

SECT. I.

Prejudices arising from Things.

THE first sort of prejudices are those which arise from the things themselves about which we judge. But here let it be observed, that there is nothing in the nature of things that will necessarily lead us into error, if we do but use our reason aright, and withhold our judgment till there appears sufficient evidence of truth. But since we are so unhappily prone to take advantage of every doubtful appearance and circumstance of things to form a wrong judgment, and plunge ourselves into mistake, therefore it is proper to consider what there is in the things themselves that may occasion our errors.

I. The obscurity of some truths, and the difficulty of searching them out, is one occasion of rash and mistaken judgment.

Some truths are difficult because they lie remote from the first principles of knowledge, and want a long chain of argument to come at them: Such are many of the deep things of algebra and geometry, and some of the theorems and problems of most parts of the mathematics. Many things also in natural philosophy are dark and intricate upon this account, because we cannot come at any certain knowledge of them without the labour of many and difficult, as well as chargeable experiments.

There are other truths which have great darkness upon them, because we have no proper means or mediums to come at the knowledge of them. Though in our age we

have found out many of the deep things of nature, by the assistance of glasses and other instruments; yet we are not hitherto arrived at any sufficient methods to discover the shape of those little particles of matter which distinguish the several sapours, odours, and colours of bodies; nor to find what sort of atoms compose liquids or solids, and distinguish wood, minerals, metals, glass, stone, &c. There is a darkness also lies upon the actions of the intellectual or angelical world; their manners of subsistence and agency, the power of spirits to move bodies, and the union of our souls with this animal body of ours, are much unknown to us on this account.

Now, in many of these cases, a great part of mankind is not content to be entirely ignorant; but they rather choose to form rash and hasty judgments, to guess at things without just evidence, to believe something concerning them before they can know them; and thereby fall into error.

This sort of prejudice, as well as most others, is cured by patience and diligence in inquiry and reasoning, and a suspension of judgment, till we have attained some proper mediums of knowledge, and till we see sufficient evidence of the truth.

II. The appearance of things in a disguise is another spring of prejudice, or rash judgment. The outside of things, which first strikes us, is oftentimes different from their inward nature; and we are tempted to judge suddenly according to outward appearances. If a picture is daubed with many bright and glaring colours, the vulgar eye admires it as an excellent piece; whereas the same person judges very contemptuously of some admirable design, sketched out only with a black pencil on a coarse paper, though by the hand of a Raphael. So the scholar spies the name of a new book in a public newspaper; he is charmed with the title, he purchases, he reads with huge expectations, and finds it is all trash and impertinence: This is a prejudice derived from the appearance; we are too ready to judge that volume valuable which had so good a frontispiece. The large heap of encomiums and swelling words of assurance, that are bestowed on quack medicines in public advertisements, tempt many a reader

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to judge them infallible, and to use the pills or the plaster, with vast hope, and frequent disappointment.

We are tempted to form our judgment of persons as well as things by these outward appearances. Where there is wealth, equipage, and splendor, we are ready to call that man happy; but we see not the vexing disquietudes of his soul: and when we spy a person in ragged garments, we form a despicable opinion of him too suddenly; we can hardly think him either happy or wise, our judgment is so strangely biassed by outward and sensible things. It was through the power of this prejudice, that the Jews rejected our blessed Saviour; they could not suffer themselves to believe that the man who appeared as the son of a carpenter was also the son of God. And because St. Paul was of little stature, a mean presence, and his voice contemptible, some of the Corinthians were tempted to doubt whether he was inspired or no.

This prejudice is cured by a longer acquaintance with the world, and a just observation that things are sometimes better and sometimes worse than they appear to be. We ought therefore to restrain our excessive forwardness to form our opinion of persons or things before we have opportunity to search into them more perfectly. Remember that a grey beard does not make a philosopher; all is not gold that glistens; and a rough diamond may be worth an immense sum.

III. A mixture of different qualities in the same thing, is another temptation to judge amiss. We are ready to be carried away by that quality which strikes the first or the strongest impressions upon us, and we judge of the whole object according to that quality, regardless of all the rest; or sometimes we colour over all the other qualities with that one tincture, whether it be bad or good.

When we have just reason to admire a man for his virtues, we are sometimes inclined not only to neglect his weaknesses, but even to put a good colour upon them, and to think them amiable. When we read a book that has many excellent truths in it, and divine sentiments, we are tempted to approve not only that whole book, but even all the writings of that author. When a poet, an orator, or a painter, has performed admirably in several illustrious

illuſtrious pieces, we ſometimes alſo admire his very errors, we miſtake his blunders for beauties, and are ſo ignorantly fond as to copy after them.

It is this prejudice that has rendered ſo many great ſcholars perfect bigots, and inclined them to defend Homer or Horace, Livy or Cicero, in their miſtakes, and vindicate all the follies of their favourite author. It is that tempts ſome great writers to ſupport the ſayings of almoſt all the ancient fathers of the church, and admire them even in their very reveries.

On the other hand, if an author has profeſſed heretical ſentiments in religion, we throw our ſcorn upon every thing he writes, we deſpiſe even his critical or mathematical learning, and will hardly allow him common ſenſe. If a poem has ſome blemiſhes in it, there is a ſet of falſe critics who decry it univerſally, and will allow no beauties there.

This ſort of prejudice is relieved by learning to diſtinguiſh things well, and not to judge in the lump. There is ſcarce any thing in the world of nature or art, in the world of morality or religion, that is perfectly uniform. There is a mixture of wiſdom and folly, vice and virtue, good and evil, both in men and things. We ſhould remember that ſome perſons have great wit and little judgment; others are judicious, but not witty. Some are good humoured without compliment; others have all the formalities of complaiſance, but no good humour. We ought to know that one man may be vicious and learned, while another has virtue without learning. That many a man thinks admirably well, who has a poor utterance; while others have a charming manner of ſpeech, but their thoughts are trifling and impertinent. Some are good neighbours, and courteous, and charitable towards men, who have no piety towards God; others are truly religious, but of moroſe natural tempers. Some excellent ſayings are found in very ſilly books, and ſome ſilly thoughts appear in books of value. We ſhould neither praiſe nor diſpraiſe by wholeſale, but ſeparate the good from the evil, and judge of them apart: The accuracy of a good judgment conſiſts much in making ſuch diſtinctions.

Yet let it be noted too, that in common diſcourſe we

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usually denominate persons and things according to the major part of their character. He is to be called a wise man who has but few follies: He is a good philosopher who knows much of nature, and for the most part reasons well in matters of human science: and that book should be esteemed well written, which has more of good sense in it than it has of impertinence.

IV. Though a thing be uniform in its own nature, yet the different lights in which it may be placed, and the different views in which it appears to us, will be ready to excite in us mistaken judgments concerning it. Let an erect cone be placed on a horizontal plane, at a great distance from the eye, and it appears a plain triangle; but we shall judge that very cone to be nothing but a flat circle if its base be obverted towards us. Set a common round plate a little obliquely before our eyes afar off, and we shall think it an oval figure: But if the very edge of it be turned towards us, we shall take it for a straight line, So when we view the several folds of a changeable silk, we pronounce this part red, and that yellow, because of its different position to the light, though the silk laid smooth in one light appears all of one colour.

When we survey the miseries of mankind, and think of the sorrows of millions, both on earth and in hell, the divine government has a terrible aspect, and we may be tempted to think hardly even of God himself: But if we view the profusion of his bounty and grace among his creatures on earth, or the happy spirits in heaven, we shall have so exalted an idea of his goodness as to forget his vengeance. Some men dwell entirely upon the promises of his gospel, and think him all mercy: Others, under a melancholy frame, dwell upon his terrors and his threatenings, and are overwhelmed with the thoughts of his severity and vengeance, as though there were no mercy in him.

The true method of delivering ourselves from this prejudice, is to view a thing on all sides, to compare all the various appearances of the same thing with one another, and let each of them have its full weight in the balance of our judgment, before we fully determine our opinion. It was by this means that the

the modern aſtronomers came to find out that the planet Saturn hath a flat broad circle round its globe, which is called its ring, by obſerving the different appearances as a narrow or a broader oval, or, as it ſometimes ſeems to be, a ſtraight line, in the different parts of its twenty-nine years revolution through the ecliptic. And, if we take the ſame juſt and religious ſurvey of the great and bleſſed God in all the diſcoveries of his vengeance and his mercy, we ſhall at laſt conclude him to be both juſt and good.

V. The caſual aſſociation of many of our ideas becomes the ſpring of another prejudice or raſh judgment, to which we are ſometimes expoſed. If in our younger years we have taken medicines that have been nauſeous, when any medicine whatſoever is afterward propoſed to us under ſickneſs, we immediately judge it nauſeous: Our fancy has ſo cloſely joined theſe ideas together, that we know not how to ſeparate them: Then the ſtomach feels the diſguſt, and perhaps refuſes the only drug that can preſerve life. So a child who has been let blood joins the ideas of pain and the ſurgeon together, and he hates the ſight of the ſurgeon becauſe he thinks of his pain: Or if he has drank a bitter potion, he conceives a bitter idea of the cup which held it, and will drink nothing out of that cup.

It is for the ſame reaſon that the bulk of the common people are ſo ſuperſtitiouſly fond of the pſalms tranſlated by Hopkins and Sternhold, and think them ſacred and divine, becauſe they have been now for more than an hundred years bound up in the ſame covers with our bibles.

The beſt relief againſt this prejudice of aſſociation is to conſider, whether there be any natural and neceſſary connection between theſe ideas, which fancy, cuſtom, or chance, hath thus joined together; and if nature has not joined them, let our judgment correct the folly of our imagination, and ſeparate theſe ideas again.

SECT. II.

Prejudices ariſing from Words.

OUR ideas and words are ſo linked together, that while we judge of things according to words, we are-

are led into several mistakes. These may be distributed under two general heads, namely, such as arise from single words or phrases, or such as arise from words joined in speech, and composing a discourse.

I. The most imminent and remarkable errors of the first kind are these three. (1) When our words are insignificant, and have no ideas; as when the mystical divines talk of the prayer of silence, the supernatural and passive night of the soul, the vicinity of powers, the suspension of all thoughts: Or (2) When our words are equivocal, and signify two or more ideas; as the words law, light, flesh, spirit, righteousness, and many other terms in scripture: Or (3) When two or three words are synonymous, and signify one idea, as regeneration and new creation in the New-Testament; both which mean only a change of the heart from sin to holiness; or, as the Elector of Cologn and the Bishop of Cologn are two titles of the same man.

These kinds of phrases are the occasion of various mistakes; but none so unhappy as those in theology: For both words without ideas, as well as synonymous and equivocal words, have been used and abused by the humours, passions, interests, or by the real ignorance and weakness of men, to beget terrible contests among Christians.

But to relieve us under all those dangers, and to remove these sort of prejudices which arise from single words or phrases, I must remit the reader to Part I. chap. IV. where I have treated about words, and to those directions which I have given concerning the definition of names, Part. I. chap. VI. sect. 3.

II. There is another sort of false judgments or mistakes which we are exposed to by words; and that is when they are joined in speech, and compose a discourse; and here we are in danger two ways.

The one is, when a man writes good sense, or speaks much to the purpose, but he has not a happy and engaging manner of expression. Perhaps he uses coarse and vulgar words, or old, obsolete, and unfashionable language, or terms, and phrases that are foreign, latinized, scholastic, very uncommon, and hard to be understood:

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And this is ſtill worſe, if his ſentences are long and intricate, or the ſound of them harſh and grating to the ear. All theſe indeed are defects in ſtile, and lead ſome nice and unthinking hearers or readers into an ill opinion of all that ſuch a perſon ſpeaks or writes. Many an excellent diſcourſe of our forefathers has had abundance of contempt caſt upon it by our modern pretenders to ſenſe, for want of their diſtinguiſhing between the language and the ideas.

On the other hand, when a man of eloquence ſpeaks or writes upon any ſubject, we are too ready to run into his ſentiments, being ſweetly and inſenſibly drawn by the ſmoothneſs of his harangue, and the pathetic power of his language. Rhetoric will varniſh every error, ſo that it ſhall appear in the dreſs of truth, and put ſuch ornaments upon vice, as to make it look like virtue: It is an art of wondrous and extenſive influence; it often conceals, obſcures or overwhelms the truth, and places ſometimes a groſs falſhood in a more alluring light. The decency of action, the muſic of the voice, the harmony of the periods, the beauty of the ſtile, and all the engaging airs of the ſpeaker, have often charmed the hearers into error, and perſuaded them to approve whatſoever is propoſed in ſo agreeable a manner. A large aſſembly ſtands expoſed at once to the power of theſe prejudices, and imbibes them all. So Cicero and Demoſthenes made the Romans and the Athenians believe almoſt whatſoever they pleaſed.

The beſt defence againſt both theſe dangers, is to learn the ſkill (as much as poſſible) of ſeparating our thoughts and ideas from words and phraſes, to judge of the things in their own natures, and in their natural or juſt relation to one another, abſtracted from the uſe of language, and to maintain a ſteady and obſtinate reſolution, to hearken to nothing but truth, in whatſoever ſtile or dreſs it appears.

Then we ſhall hear a ſermon of pious and juſt ſentiments with eſteem and reverence, though the preacher has but an unpoliſhed ſtile, and many defects in the manner of his delivery. Then we ſhall neglect and diſregard all the flattering inſinuations, whereby the orator would make way for his own ſentiments to take poſſeſſion of our ſouls, if he has not ſolid and inſtructive ſenſe equal to his

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language. Oratory is a happy talent, when it is rightly employed, to excite the passions to the practice of virtue and piety: but, to speak properly, this art has nothing to do in the search after truth.

SECT. III.

Prejudices arising from ourselves.

NEITHER *words* nor *things* would so often lead us astray from truth, if we had not within ourselves such springs of error as these that follow.

I. Many errors are derived from our weakness of reason, and incapacity to judge of things in our infant state. These are called the *prejudices of infancy*. We frame early mistakes about the common objects which surround us, and the common affairs of life: We fancy the nurse is our best friend, because children receive from their nurses their food and other conveniences of life. We judge that books are very unpleasant things, because perhaps we have been driven to them by the scourge. We judge also that the sky touches the distant hills, because we cannot inform ourselves better in childhood. We believe the stars are not risen till the sun is set, because we never see them by day. But some of these errors may seem to be derived from the next spring.

The way to cure the prejudices of infancy, is to distinguish, as far as we can, which are those opinions which we framed in perfect childhood; to remember that at that time our reason was incapable of forming a right judgment, and to bring these propositions again to be examined at the bar of mature reason.

II. Our senses gives us many a false information of things, and tempt us to judge amiss. This is called *prejudice of sense*: as, when we suppose the sun and moon to be flat bodies, and to be but a few inches broad, because they appear so to the eye. Sense inclines us to judge that air has no weight, because we do not feel it press heavy upon us; and we judge also by our senses that cold and heat, sweet and sour, red and blue, &c. are such real pro-

perties in the objects themselves, and exactly like those sensations which they excite in us.

Note, Those mistakes of this sort, which all mankind drop and lose in their advancing age, are called mere prejudices of infancy; but those which abide with the vulgar part of the world, and generally with all men, till learning and philosophy cure them, more properly attain the name of *prejudices of sense*.

These prejudices are to be removed several ways. (1.) By the assistance of one sense we cure the mistakes of another; as, when a stick thrust into the water seems crooked, we are prevented from judging it to be really so in itself; for, when we take it out of the water, both our sight and feeling agree and determine it to be straight. (2.) The exercise of our reason, and an application to mathematical and philosophical studies, cures many other *prejudices of sense*, both with relation to the heavenly and earthly bodies. (3.) We should remember that our senses have often deceived us in various instances; that they give but a confused and imperfect representation of things in many cases; that they often represent falsly those very objects to which they seem to be suited, such as the *shape*, *motion*, *size*, and *situation*, of gross bodies, if they are but placed at a distance from us; and as for the minute particles of which bodies are composed, our senses cannot distinguish them. (4.) We should remember also, that one prime and original design of our senses, is to inform us what various relations the bodies that are round about us bear to our own animal body, and to give us notice what is pleasant and useful, or what is painful or injurious to us; but they are not sufficient of themselves to lead us into a philosophical acquaintance with the inward nature of things. It must be confessed, it is by the assistance of the *eye* and the *ear* especially (which are called the *senses of discipline*) that our minds are furnished with various parts of knowledge, by reading, hearing, and observing things divine and human; yet reason ought always to accompany the exercise of our senses, whenever we would form a just judgment of things proposed to our inquiry.

Here it is proper to observe also, that as the weakness of reason in our infancy, and the dictates of our senses, sometimes

sometimes in advancing years, lead the wiser part of mankind astray from truth; so the meaner parts of our species, persons whose genius is very low, whose judgment is always weak, who are ever indulging the dictates of sense and humour, are but children of a large size, they stand exed to everlasting mistakes in life, and live and die in the midst of prejudices.

III. Imagination is another fruitful spring of false judgments Our imagination is nothing else but the various appearances of our sensible ideas in the brain, where the soul frequently works in uniting, dis-joining, multiplying, magnifying, diminishing, and altering the several shapes, colours, sounds, motions, words and things, that have been communicated to us by the outward organs of sense. It is no wonder therefore if fancy leads us into many mistakes, for it is but sense at second hand. Whatever is strongly impressed upon the imagination, some persons believe to be true. Some will choose a particular number in a lottery, or lay a large wager on a single chance of a dye, and doubt not of success, because their fancy feels so powerful an impression, and assures them it will be prosperous. A thousand pretended prophecies and inspirations, and all the freaks of enthusiasm, have been derived from this spring. Dreams are nothing else but the deceptions of fancy: A delirium is but a short wildness of the imagination; and a settled irregularity of fancy, is distraction and madness.

One way to gain a victory over this unruly faculty, is to set a watch upon it perpetually, and to bridle it in all its extravagancies; never to believe any thing merely because fancy dictates it, any more than I would believe a midnight-dream, nor to trust fancy any farther, than it is attended with severe reason. It is a very useful and entertaining power of human nature, in matters of illustration, persuasion, oratory, poetry, wit, conversation, &c. but in the calm enquiry after truth, and the final judgment of things, fancy should retire, and stand aside, unless it be called in to explain or illustrate a difficult point by a similitude.

Another method of deliverance from these prejudices of fancy, is to compare the *ideas* that arise in our imaginations

nations with the real nature of things, as often as we have occasion to judge concerning them; and let calm and sedate reason govern and determine our opinions, though fancy should shew never so great a reluctance. Fancy is the inferior faculty, and it ought to obey.

IV. The various passions or affections of the mind, are numerous and endless springs of prejudice. They disguise every object they converse with, and put their own colours upon it, and thus lead the judgment astray from truth. It is love that makes the mother think her own child the fairest, and will sometimes persuade us that a blemish is a beauty. Hope and desire make an hour of delay seem as long as two or three hours: Hope inclines us to think there is nothing too difficult to be attempted: Despair tells us that a brave attempt is mere rashness, and that every difficulty is unsurmountable. Fear makes us imagine that a bush shaken with the wind has some savage beast in it, and multiplies the dangers that attend our path: But still there is a more unhappy effect of fear, when it keeps millions of souls in slavery to the errors of established religion: What could persuade the wise men and philosophers of a Popish country to believe the gross absurdities of the Romish church, but the fear of torture, or death, the galleys, or the inquisition? Sorrow and melancholy tempt us to think our circumstances much more dismal than they are, that we may have some excuse for mourning: And envy represents the condition of our neighbour better than it is, that there might be some pretence for her own vexation and uneasiness. Anger, wrath, and revenge, and all those hateful passions, excite in us far worse ideas of men than they deserve, and persuade us to believe all that is ill of them. A detail of the evil influence of the affections of the mind upon our judgment would make a large volume.

The cure of these prejudices is attained by a constant jealousy of ourselves, and watchfulness over our passions, that they may never interpose when we are called to pass a judgment of any thing: And when our affections are warmly engaged, let us abstain from judging. It would be also of great use to us to form our deliberate judgments of persons and things in the calmest and serenest hours of life,

life, when the passions of nature are all silent, and the mind enjoys its most perfect composure: and these judgments so formed should be treasured up in the mind, that we might have recourse to them in hours of need. See many more sentiments and directions relating to this subject, in my Doctrine of the Passions, a new edition enlarged.

V. The fondness we have for *self*, and the relation which other persons and things have to ourselves, furnish us with another long list of prejudices. This indeed might be reduced to the passion of self-love; but it is so copious an head that I chose to name it a distinct spring of false judgments. We are generally ready to fancy every thing of our own has something peculiarly valuable in it, when indeed there is no other reason, but because it is our own. Were we born among the gardens of Italy, the rocks of Switzerland, or the ice and snows of Russia and Sweden, still we should imagine peculiar excellencies in our native land. We conceive a good idea of the town and village where we first breathed, and think the better of a man for being born near us. We entertain the best opinion of the persons of our own party, and easily believe evil reports of persons of a different sect or faction. Our own sex, our kindred, our houses, and our very names, seem to have something good and desirable in them. We are ready to mingle all these with ourselves, and cannot bear to have others think meanly of them.

So good an opinion have we of our own sentiments and practices, that it is very difficult to believe what a reprover says of our conduct; and we are as ready to assent to all the language of flattery. We set up our own opinions in religion and philosophy as the tests of orthodoxy and truth; and we are prone to judge every practice of other men either a duty or a crime, which we think would be a crime or a duty in us, though their circumstances are vastly different from our own. This humour prevails sometimes to such a degree, that we would make our own taste and inclination the standard by which to judge of every dish of meat that is set upon the table, every book in a library, every employment, study, and business of life, as well as every recreation.

It is from this evil principle, of setting up self for a mo-

del what other men ought to be, that the anti-chriſtian ſpirit of impoſition and perſecution had its original: Though there is no more reaſon for it than there was for the practice of that tyrant, who having a bed fit for his own ſize, was reported to ſtretch men of low ſtature upon the rack, till they were drawn out the length of his bed; and ſome add alſo, that he cut off the legs of any whom he found too long for it.

It is alſo from a principle near akin to this, that we pervert and ſtrain the writings of many venerable authors, and eſpecially the ſacred books of ſcripture, to make them ſpeak our own ſenſe. Through the influence which our own ſchemes or hypotheſes have upon the mind, we ſometimes become ſo ſharp-ſighted as to find theſe ſchemes in thoſe places of ſcripture where the holy writers never thought of them, nor the holy ſpirit intended them. At other times this prejudice brings ſuch a dimneſs upon the ſight, that we cannot read any thing that oppoſes our own ſcheme, though it be written as with ſun-beams, and in the plaineſt language; and perhaps we are in danger in ſuch a caſe of winking a little againſt the light.

We ought to bring our minds free, unbiaſſed, and teachable, to learn our religion from the word of God; but we have generally formed all the leſſer as well as the greater points of our religion before-hand, and then we read the prophets and apoſtles only to pervert them to confirm our own opinions. Were it not for this influence of *ſelf*, and a bigotry to our own tenets, we could hardly imagine that ſo many ſtrange, abſurd, inconſiſtent, wicked, miſchievous, and bloody principles, ſhould pretend to ſupport and defend themſelves by the goſpel of Chriſt.

Every learned critic has his own hypotheſis; and if the common text be not favourable to his opinion, a various lection ſhall be made authentic. The text muſt be ſuppoſed to be defective or redundant; and the ſenſe of it ſhall be literal or metaphorical, according as it beſt ſupports his own ſcheme. Whole chapters or books ſhall be added or left out of the ſacred canon, or be turned into parables by this influence. Luther knew not well how to reconcile the epiſtle of St. James to the doctrine of juſtification by faith alone, and ſo he could not allow it to be

divine.

divine. The Papists bring all the apocrypha into their bible, and stamp divinity upon it; for they can fancy purgatory is there, and they find prayers for the dead. But they leave out the second commandment, because it forbids the worship of images. Others suppose the Mosaic history of the creation, and the fall of man, to be oriental ornaments, or a mere allegory, because the literal sense of those three chapters of Genesis do not agree with their theories. Even an honest plain-hearted and unlearned Christian is ready to find something in every chapter of the bible to countenance his own private sentiments; but he loves those chapters best which speak his own opinion plainest: This is a prejudice that sticks very close to our natures; the scholar is infested with it daily, and the mechanic is not free.

Self has yet a farther and a more pernicious influence upon our understandings, and is an unhappy guide in the search after truth. When our own inclination, or our ease, our honour, or our profit, tempt us to the practice of any thing of suspected lawfulness, how do we strain our thoughts to find arguments for it and perswade ourselves it is lawful? We colour over iniquity and sinful compliance with the names of virtue and innocence, or at least of constraint and necessity. All the different and opposite sentiments and practices of mankind are too much influenced by this mean bribery, and give too just occasion for satyrical writers to say, that self-interest governs all mankind.

When the judge had awarded due damages to a person into whose field a neighbour's oxen had broke, it is reported that he reversed his own sentence, when he heard that the oxen which had done this mischief were his own. Whether this be a history or a parable, it is still a just representation of the wretched influence of *self* to corrupt the judgment.

One way to amend this prejudice, is to thrust *self* so far out of the question, that it may have no manner of influence whensoever we are called to judge and consider the naked nature, truth, and justice of things. In matters of equity between man and man, our Saviour has taught us an effectual means of guarding against this prejudice,

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and that is, to put my neighbour in the place of myself, and myself in the place of my neighbour, rather than be bribed by this corrupt principle of self-love to do injury to our neighbours. Thence arises that golden rule of dealing with others as we would have others deal with us.

In the judgment of truth and falsehood, right and wrong, good and evil, we ought to consider that every man has a SELF as well as we; and that the tastes, passions, inclinations, and interests of different men are very different, and often contrary, and that they dictate contrary things: Unless, therefore all manner of different and contrary propositions can be true at once, *self* can never be a just test or standard of truth and falsehood, good and evil.

VI. The tempers, humours, and peculiar turns of the mind, whether they be natural or acquired, have a great influence upon our judgment, and become the occasion of many mistakes. Let us survey a few of them.

(1) Some persons are of an easy and credulous temper, while others are perpetually discovering a spirit of contradiction.

The credulous man is ready to receive every thing for truth that has but a shadow of evidence; every new book that he reads, and every ingenious man with whom he converses, has power enough to draw him into the sentiments of the speaker or writer. He has so much complaisance in him, or weakness of soul, that he is ready to resign his own opinion to the first objection which he hears, and to receive any sentiments of another that are asserted with a positive air and much assurance. Thus he is under a kind of necessity, through the indulgence of this credulous humour, either to be often changing his opinions, or to believe inconsistencies.

The man of contradiction is of a contrary humour, for he stands ready to oppose every thing that is said: He gives but a slight attention to the reasons of other men, from an inward and scornful presumption that they have no strength in them. When he reads or hears a discourse different from his own sentiments, he does not give himself leave to consider whether that discourse may be true; but employs all his powers immediately to confute it. Your great disputers, and your men of controversy, are

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in continual danger of this sort of prejudice: They contend often for victory, and will maintain whatsoever they have asserted, while truth is lost in the noise and tumult of reciprocal contradictions; and it frequently happens that a debate about opinions is turned into a mutual reproach of persons.

The prejudice of credulity may in some measure be cured, by learning to set a high value on truth, and by taking more pains to attain it; remembering that truth oftentimes lies dark and deep, and requires us to dig for it as hid treasure; and that falsehood often puts on a fair disguise, and therefore we should not yield up our judgment to every plausible appearance. It is no part of civility or good breeding to part with truth, but to maintain it with decency and candour.

A spirit of contradiction is so pedantic and hateful, that a man should take much pains with himself to watch against every instance of it: He should learn so much good humour, at least, as never to oppose any thing without just and solid reason for it: He should abate some degrees of pride and moroseness, which are never failing ingredients in this sort of temper, and should seek after so much honesty and conscience as never to contend for conquest or triumph; but to review his own reasons, and to read the arguments of his opponents (if possible) with an equal indifferency, and be glad to spy truth, and to submit to it, though it appear on the opposite side.

(2.) There is another pair of prejudices, derived from two tempers of mind, near akin to those I have just now mentioned; and these are the dogmatical and the sceptical humour, that is, always positive, or always doubting.

By what means soever the dogmatist came by his opinions, whether by his senses or by his fancy, his education or his own reading, yet he believes them all with the same assurance that he does a mathematical truth; he has scarce any mere probabilities that belong to him; every thing with him is certain and infallible; every punctilio in religion is an article of his faith; and he answers all manner of objections by a sovereign contempt.

Persons of this temper are seldom to be convinced of any mistake: A full assurance of their own notions makes all

all the difficulties on their own side vanish so intirely, that they think every point of their belief is written as with sunbeams, and wonder any one should find a difficulty in it. They are amazed that learned men should make a controversy of what is to them so perspicuous and indubitable. The lowest rank of people, both in learned and in vulgar life, is very subject to this obstinacy.

Scepticism is a contrary prejudice. The dogmatist is sure of every thing, and the sceptic believes nothing. Perhaps he has found himself often mistaken in matters of which he thought himself well assured in his younger days, and therefore he is afraid to give his assent to any thing again. He sees so much shew of reason for every opinion, and so many objections also arising against every doctrine, that he is ready to throw off the belief of every thing: He renounces at once the pursuit of truth, and contents himself to say, There is nothing certain. It is well, if through the influence of such a temper he does not cast away his religion as well as his philosophy, and abandon himself to a profane course of life, regardless of hell or heaven.

Both these prejudices last mentioned, though they are so opposite to each other, yet they arise from the same spring, and that is, impatience of study, and want of diligent attention in the search of truth. The dogmatist is in haste to believe something; he cannot keep himself long enough in suspence, till some bright and convincing evidence appear on one side, but throws himself casually into the sentiments of one party or another, and then he will hear no argument to the contrary. The sceptic will not take pains to search things to the bottom, but when he sees difficulties on both sides, resolves to believe neither of them. Humility of soul, patience in study, diligence in inquiry, with an honest zeal for truth, would go a great way towards the cure of both these follies.

(3.) Another sort of temper that is very injurious to a right judgment of things, is an inconstant, fickle, changeable spirit, and a very uneven temper of mind. When such persons are in one humour, they pass a judgment of things agreeable to it; when their humour changes, they reverse their first judgment, and embrace a new opinion. They have no steadiness of soul; they want firmness of mind

mind sufficient to establish themselves in any truth, and are ready to change it for the next alluring falshood that is agreeable to their change of humour. This fickleness is sometimes so mingled with their very constitution by nature, or by distemper of body, that a cloudy day and a lowring sky shall strongly incline them to form an opinion both of themselves, and of persons and things round about them, quite different from what they believe when the sun shines, and the heavens are serene.

This sort of people ought to judge of things and persons in their most sedate, peaceful, and composed hours of life, and reserve these judgments for their conduct at more unhappy seasons.

(4.) Some persons have a violent and turgid manner both of talking and thinking; whatsoever they judge of, it is always with a tincture of this vanity. They are always in extremes, and pronounce concerning every thing in the superlative. If they think a man to be learned, *he is the chief scholar of the age;* If another has low parts, *he is the greatest blockhead in nature*: If they approve any book on divine subjects, *it is the best book in the world next to the bible*: If they speak of a storm of rain or hail, *it is the most terrible storm that fell since the creation:* And a cold winter day is the *coldest that ever was known.*

But the men of this swelling language ought to remember, that nature has ten thousand moderate things in it, and does not always deal in extremes as they do.

(5.) I think it may be called another sort of prejudice derived from humour, when some men believe a doctrine merely because it is ancient, and has been long believed; others are so fond of novelty, that nothing prevails upon their assent so much as new thoughts and new motions. Again, there are some who set a high esteem upon every thing that is foreign and farfetched; therefore China pictures are admired, how awkward soever: Others value things the more for being of our own native growth, invention or manufacture, and these as much despise foreign things.

Some men of letters and theology will not believe a proposition even concerning a sublime subject, till every thing mysterious, deep, and difficult, is cut off from it, though the

the ſcripture aſſerts it never ſo plainly; others are ſo fond of a myſteryand things incomprehenſible, that they would ſcarce believe the doctrine of theTrinity, if it could be explained; they incline to that fooliſh rant of one of the antients, *Credo quia impoſſibile eſt*; "I believe it becauſe it is impoſſible."

To cure theſe miſtakes, remember that neither antique nor novel, foreign nor native, miſterious nor plain, are certain characters either of truth or falſhood.

I might mention various other *humours of men* that excite in them various prejudices, and leads them into raſh and miſtaken judgments; but theſe are ſufficient for a ſpecimen.

VII. There are ſeveral other weakneſſes which belong to human nature, whereby we are led into miſtakes, and indeed are rendered almoſt incapable of paſſing a ſolid judgment in matters of great depth and difficulty. Some have a native obſcurity of perception, (or ſhall I call it a want of natural ſagacity)? whereby they are hindred from attaining clear and diſtinct ideas. Their thoughts always ſeem to have ſomething confuſed and cloudy in them, and therefore they judge in the dark. Some have a defect of memory, and then they are not capable of comparing their preſent ideas with a great variety of others, in order to ſecure themſelves from inconſiſtency in judgment. Others may have a memory large enough, yet they are ſubject to the ſame errors, from a narrowneſs of ſoul, and ſuch a fixation and confinement of thought to a few objects, that they ſcarce ever take a ſurvey of things wide enough to judge wiſely and well, and to ſecure themſelves from all inconſiſtencies.

Though theſe are *natural defects* and *weakneſſes*, yet they may in ſome meaſure be relieve by labour, diligence, and a due attention to proper rules.

But among all the cauſes of falſe judgment which are within ourſelves, I ought by no means to leave out that univerſal and original ſpring of error, which we are informed of by the word of God; and that is, the ſin and defection of our firſt parents; whereby all our beſt natural powers, both of mind and body, are impaired, and rendered very much inferior to what they were in a ſtate

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of innocence. Our understanding is darkened, our memory contracted, our corrupt humours and passions are grown predominant, our reason enfeebled, and various disorders attend our constitution and animal nature, whereby the mind is strangely imposed upon in its judgment of things. Nor is there any perfect relief to be expected on earth. There is no hope of ever recovering from these maladies, but by a sincere return to God in the ways of his own appointment, whereby we shall be kept safe from all dangerous and pernicious errors in the matters of religion; and though imperfections and mistakes will hang about us in the present life as the effects of our original apostacy from God, yet we hope for a full deliverance from them when we arrive at heaven.

SECT. IV.

Prejudices arising from Other Persons.

WERE it not for the springs of prejudice that are lurking in ourselves, we should not be subject to so many mistakes from the influence of others: But, since our nature is so susceptive of errors on all sides, it is fit we should have hints and notices given us, how far other persons may have power over us, and become the causes of all our false judgments. This might also be cast into one heap, for they are all near akin, and mingle with each other; but for distinction-sake let them be called the prejudices of education, of custom, of authority, and such as arise from the manner of proposal.

I. Those with whom our education is intrusted may lay the first foundation of many mistakes in our younger years. How many fooleries and errors are instilled into us by our nurses, our fellow-children; by servants or unskilled teachers; which are not only maintained through the following parts of life, but sometimes have a very unhappy influence upon us! We are taught that there are bugbears and goblins in the dark; our young minds are crouded with the terrible ideas of ghosts appearing upon every occasion, or with the pleasanter tales of fairies dancing at midnight. We learn to prophecy betimes, to fore-

tel futurities by good or evil omens, and to preſage approaching death in a family by ravens and little worms, which we therefore call a death watch. We are taught to know beforehand, for a twelvemonth together, which days of the week will be fair or foul, which will be lucky or unlucky; nor is there any thing ſo ſilly, but may be impoſed upon our underſtandings in that early part of life; and theſe ridiculous ſtories abide with us too long, and too far influence the weaker part of mankind.

We chooſe our particular ſet and party in the civil, the religious, and the learned life, by the influence of education. In the colleges of learning, ſome are for the nominals, and ſome for the realiſts, in the ſcience of metaphyſics, becauſe their tutors were devoted to theſe parties. The old philoſophy and the new have gained thouſands of partiſans the ſame way: And every religion has its infant votaries, who are born, live and die in the ſame faith, without examination of any article. The Turks are taught early to believe in Mahomet; the Jews in Moſes; the heathens worſhip a multitude of gods, under the force of their education. And it would be well if there were not millions of Chriſtians, who have little more to ſay for their religion, than that they were born and bred up in it. The greateſt part of the Chriſtian world can hardly give any reaſon why they believe the Bible to be the word of God, but becauſe they have always believed it, and they were taught ſo from their infancy. As Jews and Turks, and American Heathens, believe the moſt monſtrous and incredible ſtories, becauſe they have been trained up amongſt them, as articles of faith; ſo the Papiſts believe their tranſubſtantiation, and make no difficulty of aſſenting to impoſſibilities, ſince it is the current doctrine of their catechiſms. By the ſame means, the ſeveral ſects and parties in Chriſtianity believe all the ſtrained interpretations of ſcripture by which they have been taught to ſupport their own tenets: They find nothing difficult in all the abſurd gloſſes and far-fetched ſenſes, that are ſometimes put upon the words of the ſacred writers, becauſe their ears have been always accuſtomed to theſe gloſſes; and therefore they ſit ſo ſmooth and eaſy upon their underſtandings,

derſtandings, that they know not how to admit the moſt natural and eaſy interpretation in oppoſition to them.

In the ſame manner, we are nurſed up in many ſilly and groſs miſtakes about domeſtic affairs, as well as in matters of political concernment. It is upon the ſame ground that children are trained up to be Whigs and Tories betimes; and every one learns the diſtinguiſhing terms of his own party, as the Papiſts learn to ſay their prayers in Latin, without any meaning, reaſon, or devotion.

This ſort of prejudice muſt be cured by calling all the principles of our young years to the bar of more mature reaſon, that we may judge of the things of nature and political affairs by juſter rules of philoſophy and obſervation: And even the matters of religion muſt be firſt inquired into by reaſon and conſcience, and when theſe have led us to believe ſcripture to be the word of God, then that becomes our ſovereign guide, and reaſon and conſcience muſt ſubmit to receive its dictates.

II. The next prejudice which I ſhall mention, is that which ariſes from the cuſtom or faſhion of thoſe amongſt whom we live. Suppoſe we have freed ourſelves from the younger prejudices of our education, yet we are in danger of having our mind turned aſide from truth by the influence of general cuſtom.

Our opinion of meats and drinks, of garments and forms of ſalutation, are influenced much more by cuſtom, than by the eye, the ear, or the taſte. Cuſtom prevails even over ſenſe itſelf, and therefore no wonder if it prevail over reaſon too. What is it but *cuſtom* that renders many of the mixtures of food and ſauces elegant in Britain, which would be aukward and nauſeous to the inhabitants of China, and indeed were nauſeous to us when we firſt taſted them? What but cuſtom could make thoſe ſalutations polite in Muſcovy, which are ridiculous in France or England? We call ourſelves indeed the politer nations, but it is we who judge thus of ourſelves; and that fancied politeneſs is oftentimes more owing to cuſtom than reaſon. Why are the forms of our preſent garments counted beautiful, and thoſe faſhions of our anceſtors the matter of ſcoff and contempt, which in their day were all decent and genteel? It is cuſtom that forms our opinion

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of dress, and reconciles by degrees to those habits which at first seemed very odd and monstrous. It must be granted, there are some garments and habits which have a natural congruity or incongruity, modesty or immodesty, decency or indecency, gaudery or gravity; though for the most part there is but little of reason in these affairs: But what little there is of reason or natural decency, custom triumphs over all. It is almost impossible to persuade a gay lady that any thing can be decent which is out of the fashion: And it were well if fashion stretched its powers no farther than the business of drapery and the fair sex.

The methods of our education are governed by custom. It is custom, and not reason, that sends every boy to learn the Roman poets, and begin a little acquaintance with Greek, before he is bound an apprentice to a soapboiler or leather-seller. It is custom alone that teaches us Latin by the rules of a Latin grammar; a tedious and absurd method! And what is it but custom that has for past centuries confined the brightest geniuses, even of the highest rank in the female world, to the business of the needle only, and secluded them most unmercifully from the pleasure of knowledge, and the divine improvements of reason? But we begin to break all these chains, and reason begins to dictate the education of youth. May the growing age be learned and wise!

It is by the prejudice arising from our own customs, that we judge of all other civil and religious forms and practices. The rites and ceremonies of war and peace in other nations, the forms of weddings and funerals, the several ranks of magistracy, the trades and employments of both sexes, the public and the domestic affairs of life, and almost every thing of foreign customs, is judged irregular. It is all imagined to be unreasonable or unnatural, by those who have no other rule to judge of nature and reason, but the customs of their own country, or the little town where they dwell. Custom is called a second nature, but we often mistake it for nature itself.

Besides all this, there is a fashion in opinions, there is a fashion in writing and printing, in style and language. In our day it is the vogue of the nation that parliaments

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may settle the succession of the crown, and that a people can make a king; in the last age this was a doctrine akin to treason. Citations from the Latin poets were an embellishment of style in the last century, and whole pages in that day were covered with them; it is forbidden by custom, and exposed by the name of pedantry; whereas in truth both these are extremes. Sometimes our printed books shall abound in capitals, and sometimes reject them all. Now we deal much in essays, and most unreasonably despise systematic learning, whereas our fathers had a just value for regularity and systems; then folios and quartos were the fashionable sizes, as volumes in octavo are now. We are ever ready to run into extremes, and yet custom still persuades us that reason and nature are on our side.

This business of the fashion has a most powerful influence on our judgments; for it employs those two strong engines of fear and shame to operate upon our understandings with unhappy success. We are ashamed to believe or profess an unfashionable opinion in philosophy; and a cowardly soul dares not so much as indulge a thought contrary to the established or fashionable faith, nor act in opposition to custom, though it be according to the dictates of reason.

I confess there is a respect due to mankind, which should incline even the wisest of men to follow the innocent customs of their country in the outward practices of civil life, and in some measure to submit to fashion in all indifferent affairs, where reason and scripture make no remonstrances against it. But the judgments of the mind ought to be for ever free, and not biassed by the customs and fashions of any age or nation whatsoever.

To deliver our understandings from this danger and slavery, we should consider these three things.

1. That the greatest part of the civil customs of any particular nation or age spring from humour rather than reason. Sometimes the humour of the prince prevails, and sometimes the humour of the people. It is either the great or the many who dictate the fashion, and these have not always the highest reason on their side.

2. Consider also, that the customs of the same nations in

different ages, the customs of different nations in the same age, and the customs of different towns and villages in the same nation, are very various and contrary to each other. The fashionable learning, language, sentiments, and rules of politeness, differ greatly in different countries and ages of mankind; but truth and reason are of a more uniform and steady nature, and do not change with the fashion. Upon this account, to cure the prepossessions which arise from custom, it is of excellent use to travel and see the customs of various countries, and to read the travels of other men, and the history of past ages, that every thing may not seem strange and uncouth which is not practised within the limits of our own parish, or in the narrow space of our own life-time.

3. Consider yet again, how often we ourselves have changed our opinions concerning the decency, propriety, or congruity of several modes or practices in the world, especially if we have lived to the age of thirty or forty. Custom or fashion, even in all its changes, has been ready to have some degree of ascendency over our understandings, and what at one time seemed decent, appears obsolete and disagreeable afterward, when the fashion changes. Let us learn therefore to abstract as much as possible from custom and fashion, when we would pass a judgment concerning the real value and intrinsic nature of things.

III. The authority of men is the spring of another rank of prejudices.

Among these, the authority of our forefathers and ancient authors is most remarkable. We pay deference to the opinion of others merely because they lived a thousand years before us; and even the trifles and impertinencies that have a mark of antiquity upon them are reverenced for this reason, because they came from the ancients.

It is granted that the ancients had many wise and great men among them, and some of their writings, which time hath delivered down to us, are truly valuable: But those writers lived rather in the infant state of the world; and the philosophers, as well as the polite authors of our age, are properly the elders who have seen the mistakes of the younger ages of mankind, and corrected them by observation and experience.

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Some borrow all their religion from the fathers of the Christian church, or from their synods or councils; but he that will read Monsieur Daille on the use of the fathers, will find many reasons why they are by no means fit to dictate our faith, since we have the gospel of Christ, and the writings of the apostles and prophets in our hands.

Some persons believe every thing that their kindred, their parents, and their tutors believe. The veneration and the love which they have for their ancestors incline them to swallow down all their opinions at once, without examining what truth or falsehood there is in them. Men make up their principles by inheritance, and defend them as they would their estates, because they are born heirs to them. I freely grant, that parents are appointed by God and nature to teach us all the sentiments and practice of our younger years; and happy are those whose parents lead them into the paths of wisdom and truth! I grant farther, that when persons come to years of discretion, and judge for themselves, they ought to examine the opinions of their parents, with the greatest modesty, and with an humble deference to their superior character; they ought in matters perfectly dubious to give the preference to their parents advice, and always to pay them the first respect, nor ever depart from their opinions and practice, till reason and conscience make it necessary. But, after all, it is possible that parents may be mistaken, and therefore reason and scripture ought to be our final rules of determination in matters that relate to this world, and that which is to come.

Sometimes a favourite author, or a writer of great name, drags a thousand followers after him into his own mistakes, merely by the authority of his name and character. The sentiments of Aristotle were imbibed and maintained by all the schools in Europe for several centuries; and a citation from his writings was thought a sufficient proof of any proposition. The great Descartes had also too many implicit believers in the last age, though he himself, in his philosophy, disclaims all such influence over the minds of his readers. Calvin and Luther, in the days of reformation from Popery, were learned and pious men; and there have been a succession of their disciples,

ciples, even to this day, who pay too much reverence to the words of their maſters. There are others who renounce their authority, but give themſelves up in too ſervile a manner to the opinion and authority of other maſters, and follow as bad or worſe guides in religion.

If only learned, and wiſe, and good men had influence on the ſentiments of others, it would be at leaſt a more excuſable ſort of prejudice, and there would be ſome colour of ſhadow and reaſon for it: But that riches, honours, and outward ſplendor, ſhould ſet up perſons for dictators to all the reſt of mankind; this is a moſt ſhameful invaſion of the right of our underſtanding on the one hand, and as ſhameful a ſlavery of the ſoul on the other. The poor man, or the labourer, too often believes ſuch a principle in politics, or in morality, and judges concerning the rights of the king and the people juſt as his wealthy neighbour does. Half the pariſh follows the opinion of the eſquire; and the tenants of a manor fall into the ſentiments of their lord, eſpecially if he lives among them. How unreaſonable, and yet how common is this!

As for the principles of religion, we frequently find how they are taken up and forſaken, changed and reſumed by the influences of princes. In all nations, the prieſts have much power alſo in dictating the religion of the people, but the princes dictate to them: And, where there is a great pomp and grandeur attending the prieſthood in any religion whatſoever, with ſo much the more reverence and ſtronger faith do the people believe whatever they teach them: Yet it is too evident, that riches, and dominions, and high titles, in church or ſtate, have no manner of pretence to truth and certainty, wiſdom and goodneſs, above the reſt of mortals, becauſe theſe ſuperiorities in this world are not always conferred according to merit.

I confeſs, where a man of wiſdom and years, of obſervation and experience, gives us his opinion and advice in matters of the civil or the moral life; reaſon tells us we ſhould pay a great attention to him, and it is probable he may be in the right. Where a man of long exerciſe in piety ſpeaks of practical religion, there is due deference to be paid to his ſentiments: And the ſame we may ſay concerning

cerning an ingenious man, long verſed in any art or ſcience, he may juſtly expect due regard when he ſpeaks of his own affairs and proper buſineſs. But, in other things, each of theſe may be ignorant enough, notwithſtanding all their piety and years, and particular ſkill: Nor even in their own proper province are they to be believed in every thing, without reſerve, and without examination.

To free ourſelves from theſe prejudices, it is ſufficient to remember, that there is no rank or character among mankind, which has any ſuch pretence to ſway the judgments of other men by their authority: For there have been perſons of the ſame rank and character who have maintained different and contrary ſentiments; but all theſe can never be true, and therefore the mere name or reputation that any of them poſſeſs is not a ſufficient evidence of truth.

Shall we believe the ancients in philoſophy? But ſome of the ancients were Stoics, ſome Peripatetics, ſome Platonics, and ſome Epicureans, ſome Cynics, and ſome Sceptics. Shall we judge of matters of the Chriſtian faith by the fathers, or primitive writers for three or four hundred years after Chriſt? But they often contradicted one another, and themſelves too; and, what is worſe, they ſometimes contradicted the ſcripture itſelf. Now, among all theſe different and contrary ſentiments in philoſophy and religion, which of the ancients muſt we believe, for we cannot believe them all?

Again, To believe in all things as our predeceſſors did, is the ready way to keep mankind in an everlaſting ſtate of infancy, and to lay an eternal bar againſt all the improvements of our reaſon and our happineſs. Had the preſent age of philoſophers ſatisfied themſelves with the ſubſtantial forms and occult qualities of Ariſtotle, with the ſolid ſpheres, eccentrics, and epicycles of Ptolemy, and the ancient aſtronomers; then the great Lord Bacon, Copernicus, and Deſcartes, with the greater Sir Iſaac Newton, Mr. Locke, and Mr. Boyle, had riſen in our world in vain. We muſt have blundered on ſtill, in ſucceſſive generations, among abſurdities and thick darkneſs, and a hundred uſeful inventions for the happineſs of human life had never been known.

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Thus it is in the matters of philosophy and science. But, you will say, shall not our own ancestors determine our judgment in matters of civil or religious concernment? If they must, then the child of a Heathen must believe that Heathenism is truth; the son of a Papist must assent to all the absurdities of Popery; the posterity of the Jews and Socinians must for ever be Socinians and Jews; and a man whose father was of Republican principles, must make a succession of Republicans in his family to the end of the world. If we ought always to believe whatsoever our parents, our priests, or our princes believe, the inhabitants of China ought to worship their own idols, and the savages of Africa ought to believe all the nonsense, and practise the idolatry of their Negro fathers and kings. The British nation, when it was Heathen, could never have become Christian; and, when it was a slave to Rome, it could never have been reformed.

Besides, let us consider, that the great God, our common Maker, has never given one man's understanding a legal and rightful sovereignty to determine truths for others, at least after they are past the state of childhood or minority. No single person, how learned and wise, and great soever, or whatsoever natural, or civil, or ecclesiastical relation he may have to us, can claim this dominion over our faith. St. Paul the apostle, in his private capacity, would not do it; nor hath an inspired man any such authority, until he makes divine commission appear. Our Saviour himself tells the Jews, that if he had not done such monstrous works among them, they had not sinned in disbelieving his doctrines, and refusing him for the Messiah. No bishop or presbyter, no synod or council, no church or assembly of men, since the days of inspiration, hath power, derived to them from God to make creeds or articles of faith for us, and impose them upon our understandings. We must all act according to the best of our own light, and the judgment of our own consciences, using the best advantages which providence hath given us, with an honest and impartial diligence to inquire and search out the truth: For every one of us must give an account of himself to God. To believe as the church, or the court believes, is but a sorry and a dangerous

ous faith: This principle would make more Heathens than Christians, and more Papists than Protestants; and perhaps lead more souls to hell than to heaven; for our Saviour himself hath plainly told us, that if the blind will be led by the blind, they must both fall into the ditch.

Though there be so much danger of error arising from the three prejudices last mentioned, yet, before I dismiss this head, I think it proper to take notice, that, as education, custom, and authority, are no sure evidences of truth, so neither are they certain marks of falsehood: for reason and scripture may join to dictate the same things which our parents, our nurses, our tutors, our friends, and our country, believe and profess. If there appears sometimes in our age a pride and petulancy in youth, zealous to cast off the sentiments of their fathers, and teachers, on on purpose to shew that they carry none of the prejudices of education and authority about them. They indulge all manner of licentious opinions and practices, from a vain pretence of asserting their liberty. But alas! This is but changing one prejudice for another; and sometimes it happens by this means, that they make a sacrifice both of truth and virtue to the vile prejudices of their pride and sensuality.

IV. There is another tribe of prejudices which are near akin to those of authority, and that is, when we receive a doctrine because of the manner in which it is proposed to us by others. I have already mentioned the powerful influence that oratory and fine words have to insinuate a false opinion; and sometimes truth is refused, and suffers contempt in the lips of a wise man, for want of the charms of language: But there are several other manners of proposal, whereby mistaken sentiments are powerfully conveyed into the mind.

Some persons are easily persuaded to believe what another dictates with a positive air, and a great degree of assurance: They feel the overbearing force of a confident dictator, especially if he be of a superior rank or character to themselves.

Some are quickly convinced of the truth of any doctrine, when he that proposes it puts on all the airs of piety, and makes solemn appeals to heaven, and protesta-

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tions of the truth of it: The pious mind of a weaker Christian is ready to receive any thing that is pronounced with such an awful solemnity.

It is a prejudice near akin to this, when an humble soul is frighted into any particular sentiments of religion, because a man of great name or character pronounces heresy upon the contrary sentiments, casts the disbeliever out of the church, and forbids him the gates of heaven.

Others are allured into particular opinions by gentler practices on the understanding: Not only the soft tempers of mankind, but even hardy and rugged souls, are sometimes led captives to error by the soft air of address, and the sweet and engaging methods of persuasion and kindness.

I grant, where natural or revealed religion plainly dictate to us the infinite and everlasting importance of any sacred doctrine, it cannot be improper to use any of these methods, to persuade men to receive and obey the truth, after we have given sufficient reason and argument to convince their understandings. Yet all these methods, considered in themselves, have been often used to convey falsehood into the soul as well as truth; and if we build our faith merely upon these foundations, without regard to the evidence of truth, and the strength of argument, our belief is but the effect of prejudice: For neither the positive, the awful or solemn, the terrible or the gentle methods of address carry any certain evidence with them that truth lies on that side.

There is another manner of proposing our own opinion, or rather opposing the opinions of others, which demands a mention here, and that is when persons make a jest serve instead of an argument; when they refute what they call error, by a turn of wit, and answer every objection against their own sentiments by casting a sneer upon the objector. These scoffers practise with success upon weak and cowardly spirits: Such as have not been well established in religion or morality, have been laughed out of the best principles by a confident buffoon: they have yielded up their opinions to a witty banterer, and sold their faith and religion for a jest.

There is no way to cure these evils in such a degenerate world

world as we live in, but by learning to distinguish well between the substance of any doctrine, and the manner of address, either in proposing, attacking, or defending it; and then by setting a just and severe guard of reason and conscience over all the exercises of our judgment, resolving to yield to nothing but the convincing evidence of truth, religiously obeying the light of reason, in matters of pure reason, and the dictates of revelation in things that relate to our faith.

Thus we have taken a brief survey of some of the infinite varieties of prejudice that attend mankind on every side in the present state, and the dangers of error, or of rash judgment, we are perpetually exposed to in this life: This chapter shall conclude with one remark, and one piece of advice.

The remark is this, The same opinion, whether false or true, may be dictated by many prejudices at the same time; for, as I hinted before, prejudice may happen to dictate truth sometimes as well as error. But, where two or more prejudices oppose one another, as it often happens, the stronger prevails and gains the assent: Yet how seldom does reason interpose with sufficient power to get the ascendant of them all, as it ought to do!

The advice follows, namely, Since we find such a swarm of prejudices attending us both within and without; since we feel the weakness of our reason, the frailty of our natures, and our insufficiency to guard ourselves from error upon this account, it is not at all unbecoming the character of a logician or a philosopher, together with the advice already given, to direct every person in his search after truth to make his daily addresses to heaven, and implore the God of truth to lead him into all truth; and to ask wisdom of him who giveth liberally to them that ask it, and upbraideth us not with our follies.

Such a devout practice will be an excellent preparative for the best improvement of all the directions and rules proposed in the two following chapters.

CHAP. IV.

General Directions to assist us in judging aright.

THE chief design of the art of logic is to assist us in forming a true judgment of things; a few proper observations for this end have been dropt occasionally in some of the foregoing chapters: Yet it is necessary to mention them again in this place, that we may have a more complete and simultaneous view of the general directions, which are necessary in order to judge aright. A multitude of advices may be framed for this purpose; the chief of them may, for order sake, be reduced to the following heads.

Direction I. "When we consider ourselves as philosophers, or searchers after truth, we should examine all our old opinions afresh, and inquire what was the ground of them, and whether our assent was built on just evidence; and then we should cast off all those judgments which were formed heretofore without due examination." A man in pursuit of knowledge should throw off all those prejudices which he had imbibed in times past, and guard against all the springs of error mentioned in the preceeding chapter, with the utmost watchfulness, for time to come.

Observe here, That this rule of casting away all our former prejudicate opinions and sentiments is not proposed to any of us to be practised at once, considered as men of business or religion, as friends or neighbours, as fathers or sons, as magistrates, subjects, or Christians; but merely as philosophers and searchers after truth: And though it may be well presumed that many of our judgments, both true and false, together with the practices built thereon in the natural, the civil, and the religious life, were formed without sufficient evidence; yet an universal rejection of all these might destroy at once our present sense and practice of duty with regard to God, ourselves, and our fellow creatures. Mankind would be hereby thrown into such a state of doubting and indifference

ference, that it would be too long ere they recovered any principles of virtue or religion by a train of reasonings.

Besides, the common affairs of human life often demand a much speedier determination, and we must many times act upon present probabilities: The bulk of mankind have not time and leisure, and advantages sufficient to begin all their knowledge anew, and to build up every single opinion and practice afresh, upon the justest grounds of evidence.

Yet let it be observed also, that so far as any person is capable of forming and correcting his notions, and his rules of conduct in the natural, civil, and religious life, by the strict rules of logic; and so far as he hath time and capacity to review his old opinions, to re-examine all those which are any ways doubtful, and to determine nothing without just evidence, he is likely to become so much the wiser and the happier man; and, if divine grace assist him, so much the better Christian. And though this cannot be done all at once, yet it may be done by prudent steps and degrees, till our whole set of opinions and principles be in time corrected and reformed, or at least established upon juster foundations.

Direction II. "Endeavour that all your ideas of those objects, concerning which you pass any judgment, be clear and distinct, complete, comprehensive, extensive, and orderly, as far as you have occasion to judge concerning them." This is the substance of the last chapter of the first part of logic. The rules which direct our conceptions must be reviewed, if we would form our judgments aright. But if we will make haste to judge at all adventures, while our ideas are dark and confused, and very imperfect, we shall be in danger of running into many mistakes. This is like a person who would pretend to give the sum total of a large account in arithmetic, without surveying all the particulars; or as a painter, who professes to draw a fair and distinct landskip in the twilight, when he can hardly distinguish a house from a tree.

Observe here, That this direction does not require us to gain clear, distinct, complete ideas of things in all their parts, powers, and qualities, in an absolute sense; for this belongs to God alone, and is impossible for us to attain:

But

But it is expreſſed in a relative or limited ſenſe; that is, our ideas ſhould be clear, diſtinct, and comprehenſive, &c. at leaſt ſo far as we have occaſion at that time to judge concerning them. We may form many true and certain judgments concerning God, angels, animals, men, heaven, hell, &c. by thoſe partial and very imperfect conceptions of them to which we have attained, if we judge no farther concerning them than our conceptions reach.

We may have a clear and diſtinct idea of the exiſtence of many things in nature, and affirm that they do exiſt, though our ideas of their intimate eſſences and cauſes, their relations and manners of action, are very confuſed and obſcure. We may judge well concerning ſeveral properties of any being, though other properties are unknown; for perhaps we know not all the properties of any being whatſoever.

Sometimes we have clear ideas of the abſolute properties of an object; and we may judge of them with certainty, while the relative properties are very obſcure and unknown to us. So we may have a clear and juſt idea of the area of a parallelogram, without knowing what relation it bears to the area of a triangle, or a polygon: I may know the length of the diameter of a circle, without knowing what proportion it has to the circumference.

There are other things, whoſe external relative properties, with reſpect to each other, or whoſe relation to us, we know better than their own inward and abſolute properties, or their eſſential diſtinguiſhing attributes. We perceive clearly, that fire will warm or burn us, and will evaporate water; and that water will allay our thirſt, or quench the fire, though we know not the inward diſtinguiſhing particles, or prime eſſential properties of fire or water. We may know the King, and Lord Chancellor, and affirm many things of them in their legal characters, though we can have but a confuſed idea of their perſons or natural features, if we have never ſeen their faces. So the ſcripture has revealed God himſelf to us, as our Creator, Preſerver, Redeemer, and Sanctifier, and as the object of our worſhip, in clearer ideas than it has revealed many other abſtruſe queſtions which may be raiſed about his own divine eſſence or ſubſtance, his immenſity or omnipreſence.

This

This therefore is the general observation in order to guide our judgments, "That we should not allow ourselves to form a judgment concerning things farther than our clear and distinct ideas reach, and then we are not in danger of error."

But there is one considerable objection against this rule, which is necessary to be answered; and there is one just and reasonable exception, which is as needful to be mentioned.

The objection is this: May we not judge safely concerning some total or complete ideas, when we have a clear perception only of some parts or properties of them? May we not affirm, that all that is in God is eternal, or that all his unknown attributes are infinite, though we have so very imperfect an idea of God, eternity, and infinity? Again, May we not safely judge of particular objects, whose idea is obscure, by a clear idea of the general? May I not affirm, That every unknown species of animals has inward springs of motion, because I have a clear idea that these inward springs belong to an animal in general?

Answer. All those supposed unknown parts, properties, or species, are clearly and distinctly perceived to be connected with, or contained in the known parts, properties, or general ideas, which we suppose to be clear and distinct, as far as we judge of them: And as we have no particular idea of those unknown divine attributes, or unknown species of animals; so there is nothing particular affirmed concerning them beyond what belongs to the general idea of divine attributes, or animals, with which I clearly and distinctly perceive them to be connected.

It may be illustrated in this manner. Suppose a long chain lies before me, whose nearest links I see are iron rings, and I see them fastened to a post near me, but the most distant links lie beyond the reach of my sight, so that I know not whether they are oval or round, brass or iron: Now I may boldly affirm, the whole length of this chain is fastened to the post, for I have a clear idea, that the nearest links are thus fastened, and a clear idea that the distinct links are connected with the nearest, if I can draw the whole chain by one link.

Or thus: If two known ideas, A and B are evidently

joined, or agree, and if C unknown be included in A, and alſo D unknown be included in B, then I may affirm that C and D are joined and agree: For I have a clear perception of the union of the two known ideas A and B; and alſo a clear perception of the connection of the unknown ideas with the known. So that clear and diſtinct ideas muſt ſtill abide as a general neceſſary qualification, in order to form a right judgment: And indeed it is upon this foot that all ratiocination is built, and the concluſions are thus formed, which reduce things unknown from things known.

Yet it ſeems to me, that there is one juſt limitation or exception to this general rule of judgment, as built on clear and diſtinct ideas, and it is this.

Exception. In matter of mere teſtimony, whether human or divine, there is not always a neceſſity of clear and diſtinct ideas of the things which are believed. Though the evidence of propoſitions, which are entirely formed by ourſelves, depends on the clearneſs and diſtinctneſs of thoſe ideas of which they are compoſed, and on our own clear perception of their agreement or diſagreement, yet we may juſtly aſſent to propoſitions formed by others, when we have neither a very clear conception in ourſelves of the true ideas contained in the words, nor how they agree or diſagree; provided always, that we have a clear and ſufficient evidence of the credibility of the perſons who inform us.

Thus, when we read in ſcripture the great doctrines of the deity of Chriſt, of the union of the divine and human natures in him, of the divine agency of the bleſſed Spirit, that the Son is the brightneſs of the Father's glory, that all things were created by him and for him, that the Son ſhall give up the kingdom to the Father, and that God ſhall be all in all; we may ſafely believe them: For, though the ideas of theſe objects themſelves are not ſufficiently clear, diſtinct, and perfect, for our own minds to form theſe judgments or propoſitions concerning them, yet we have a clear and diſtinct perception of God's revealing them, or that they are contained in ſcripture; and this is ſufficient evidence to determine our aſſent.

The ſame thing holds true in ſome meaſure, where credible

dible human testimony assures us of some propositions, while we have no sufficient ideas of the subject and predicate of them to determine our assent. So when an honest and learned mathematician assures a ploughman that the three angles of a triangle are equal to two right angles, or that the square of the hypotenuse of a right-angled triangle is equal the sum of the squares of the two sides; the ploughman, who has but confused ideas of these things, may firmly and safely believe these propositions, upon the same ground because he has evidence of the skill and faithfulness of his informer*.

Direction

* Perhaps some may object against this representation of things, and say, that, "We cannot properly be said to believe "a proposition any further than we ourselves have ideas un- "der the terms: Therefore, if we have no ideas under the "terms, we believe nothing but the connection of words or "sounds; and, if we have but obscure and inadequate ideas "under the terms, then we partly believe a connection of "things, and partly a connection of sounds. But that we can- "not properly be said to believe the proposition, for our faith "can never go beyond our ideas."

Now, to set this matter in a clear light, I suppose that every proposition which is proposed to my assent, is a sentence made up of terms which have some ideas under them known or unknown to me. I confess, if I believe there are no ideas at all under the terms, and there is nothing meant by them, then indeed, with regard to me, it is the mere joining of sounds: But if, for instance, a ploughman has credible information from an honest and skilful mathematician, that an elipsis is made by the section of a cone, he believes the proposition, or he believes the sentence is true, as it is made up of terms which his informant understands, though the ideas be unknown to him; that is, he believes there are some ideas which his informant has under these words which are really connected. And, I think, this may be called believing the proposition, for it is a belief of something more than the mere joining of sounds; it is a belief of the real connexion of some unknown ideas belonging to those sounds; and in this sense a man may be said to believe the truth of a proposition, which he doth not understand at all.

With more reason still may we be said to believe a proposition upon credible testimony, if we have some sort of ideas under the terms, though they are but partial or inadequate and obscure; such as, Divine answers were given by Urim and Thummin: For, since it is purely upon testimony we believe the known parts of the ideas signified by those words to be

Direction III. "When you have obtained as clear and comprehenſive ideas as needful, both of the ſubject and predicate

connected, upon the ſame teſtimony we may alſo believe all the unknown parts of the ideas ſignified by thoſe words to be connected, namely, becauſe our informant is knowing and faithful. And in this ſenſe we may juſtly be ſaid to believe a propoſition of ſcripture entirely, which we underſtand but very imperfectly, becauſe God who reveals it is knowing and faithful in perfection.

And indeed, unleſs this repreſentation of the matter be allowed, there are but very few propoſitions in the world, even in human things, to which we can give an entire aſſent, or which we may be ſaid either to know, or believe, becauſe there is ſcarce any thing on earth of which we have an adequate, and moſt perfect idea. And it is evident, that in divine things there is ſcarce any thing which we could either know or believe, without this allowance: For, though reaſon and revelation join to inform me, that God is holy, how exceeding inadequate are my ideas of God, and of his holineſs? Yet I may boldly and entirely aſſent to this whole propoſition, ſince I am ſure that every known and unknown idea ſignified by the term God is connected with the ideas of the term holineſs, becauſe reaſon partly informs me, but eſpecially becauſe the divine teſtimony which has connected them is certainly credible.

I might argue upon this head perhaps more forcibly from the doctrine of God's incomprehenſibleneſs. If we could believe nothing but what we have ideas of, it would be impoſſible for us to believe that God is incomprehenſible: For this implies in it a belief that there are ſome unknown ideas belonging to the nature of God. Therefore we both believe and profeſs that ſomething concerning unknown ideas, when we believe and profeſs that God is incomprehenſible.

I perſuade myſelf that moſt of thoſe very perſons who object againſt my repreſentation of things, will yet readily confeſs, they believe all the propoſitions in ſcripture, rather than declare they do not believe ſeveral of them: though they muſt acknowledge that ſeveral of them are far above their underſtanding, or that they have ſcarce any ideas of the true ſenſe of them. And therefore, where propoſitions derived from credible teſtimony are made up of dark or inadequate ideas, I think it is much more proper to ſay we believe them, than that we do not believe them, leſt we cut off a multitude of the propoſitions of the bible from our aſſent of faith.

Yet let it be obſerved here, that when we believe a propoſition on mere teſtimony, of which we have no ideas at all, we can only be ſaid to give a general implicit aſſent to the truth of that propoſition, without any particular knowledge of, or

predicate of a proposition, then compare those ideas of the subject and predicate together with the utmost attention, and observe how far they agree, and wherein they differ." Whether the proposition may be affirmed absolutely or relatively, whether in whole or in part, whether universally or particularly, and then under what particular limitations. Turn these ideas about in your mind, and take a view of them on all sides, just as a mason would do to see whether two hewn stones exactly suit each other in every part, and are fit to be joined in erecting a carved or fluted pillar.

Compare the whole subject with the whole predicate in their several parts: Take heed in this matter that you neither add to, nor diminish the ideas contained in the subject or in the predicate; for such an inadvertence or mistake will expose you to great error in judgment.

Direction IV. "Search for evidence of truth with diligence and honesty, and be heartily ready to receive evidence, whether for the agreement or disagreement of ideas."

Search

explicit assent to the special truth contained in that proposition: And this our implicit assent is of very little use, unless it be to testify our belief of the knowledge and veracity of him that informs us.

As our ideas of a proposition are more or less clear and adequate, as well as just and proper, so we do explicitly assent more or less to the particular truth contained in that proposition. And our assent hereby becomes more or less useful for the increase of our knowledge, or the direction of our practice.

When divine testimony plainly proposes to our faith such a proposition whereof we have but obscure, doubtful, and inadequate ideas, we are bound implicitly to believe the truth of it, as expressed in those terms, in order to shew our submission to God who revealed it, as a God of perfect knowledge and veracity: But it is our duty to use all proper methods to obtain a farther and explicit knowledge of the particular truth contained in the proposition, if we would improve by it either in knowledge or virtue. All necessary rules of grammar and criticism should be employed to find out the very ideas that belong to those words, and which were designed by the divine speaker or writer. Though we may believe the truth of a proposition which we do not understand, yet we should endeavour to understand every proposition which we believe to be true.

Search with diligence; ſpare no labour in ſearching for the truth, in due proportion to the importance of the propoſition. Read the beſt authors who have writ on that ſubject; conſult your wiſe and learned friends in converſation; and be not unwilling to borrow hints toward your improvement from the meaneſt perſon, nor to receive any glimpſe of light from the moſt unlearned. Diligence and humility is the way to thrive in the riches of the underſtanding, as well as in gold or ſilver. Search carefully for the evidence of truth, and dig for wiſdom as for hid treaſure.

Search with a ſteady honeſty of ſoul, and a ſincere impartiality, to find the truth. Watch againſt every temptation that might bribe your judgment, or warp it aſide from truth. Do not indulge yourſelf to wiſh any unexamined propoſition were true or falſe. A wiſh often perverts the judgment, and tempts the mind ſtrangely to believe upon ſlight evidence whatſoever we wiſh to be true or falſe.

Direction V. "Since the evidence of the agreement or diſagreement of two ideas is the ground of our aſſent to any propoſition, or the great criterion of truth; therefore we ſhould ſuſpend our judgment, and neither affirm nor deny till this evidence appear."

This direction is different from the ſecond; for, though the evidence of the agreement or diſagreement of two ideas moſt times depends on the clearneſs and diſtinctneſs of the ideas themſelves, yet it does not always ariſe hence. Teſtimony may be a ſufficient evidence of the agreement or diſagreement of two obſcure ideas, as we have ſeen juſt before in the exception under the ſecond direction. Therefore, though we are not univerſally and in all caſes bound to ſuſpend our judgment till our ideas of the objects themſelves are clear and diſtinct, yet we muſt always ſuſpend our judgment, and withhold our aſſent to, or denial of any propoſition, till ſome juſt evidence appear of its truth or falſhood. It is an impatience of doubt and ſuſpence, a raſhneſs and precipitance of judgment, and haſtineſs to believe ſomething on one ſide or the other, that plunges us into many errors.

This direction to delay and to ſuſpend our aſſent is more

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particularly neceſſary to be obſerved, when ſuch propoſitions offer themſelves to us as are ſupported by education, authority, cuſtom, inclination, intereſt, or other powerful prejudices: for our judgment is led away inſenſibly to believe all that they dictate; and, where prejudices and dangers of error are multiplied, we ſhould ſet the ſtricter guard upon our aſſent.

Yet remember the caution or limitation here which I gave under the firſt direction, namely, that this is not to be too ſtrictly applied to in matters of daily practice, either in human life or religion; but, when we conſider ourſelves as philoſophers, or ſearchers after truth, we ſhould always withhold our aſſent where there is not juſt evidence: And, as far and as faſt as we can, in a due conſiſtence with our daily neceſſary duties, we ſhould alſo reform and adjuſt all our principles and practices, both in religion and the civil life, by theſe rules.

Direction VI. "We muſt judge of every propoſition by thoſe proper and peculiar mediums or means, whereby the evidence of it is to be obtained, whether it be ſenſe, conſciouſneſs, intelligence, reaſon or teſtimony. All our faculties and powers are to be employed in judging of their proper objects."

If we judge of ſounds, colours, odours, ſapors, the ſmoothneſs, roughneſs, ſoftneſs, or hardneſs of bodies, it muſt be done by the uſe of our ſenſes: But then we muſt take heed that our ſenſes are well diſpoſed, as ſhall be ſhewn afterward.

And ſince our ſenſes in their various exerciſes are in ſome caſes liable to be deceived, and more eſpecially when by our eyes or our ears we judge of the figure, quantity, diſtance, and poſition of objects that are afar off, we ought to call our reaſon in to the aſſiſtance of our ſenſes, and correct the errors of one ſenſe by the help of another.

It is by the powers of ſenſe and reaſon joined together, that we muſt judge philoſophically of the inward nature, the ſecret properties and powers, the cauſes and effects, the relations and proportions, of a thouſand corporeal objects which ſurround us on earth, or are placed at a diſtance in the heavens. If a man, on the one hand, con-

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fines himself only to sensible experiments, and does not exercise reason upon them, he may surprise himself and others with strange appearances, and learn to entertain the world with sights and shews, but will never become a philosopher: And, on the other hand, if a man imprisoned himself in his closet, and employ the most exquisite powers of reason to find out the nature of things in the corporeal world, without the use of his senses, and the practice of experiments, he will frame to himself a scheme of the chimeras instead of true philosophy. Hence came the invention of substantial forms and qualities, of *materia prima* and *privation*, with all the insignificant names used by the Peripatetic writers; and it was for want of more experiments that the great Descartes failed in several parts of his philosophical writings.

In the abstracted and speculative parts of the mathematics, which treat of quantity and number, the faculty of reason must be chiefly employed to perceive the relation of various quantities, and draw certain and useful conclusions; but it wants the assistance of sense also to be acquainted with lines, angles, and figures. And in practical mathematics our senses have still greater employment.

If we would judge of the pure properties and actions of the mind, of the nature of spirits, their various perceptions and powers, we must not inquire of our eyes and our ears, nor the images or shapes laid up in the brain, but we must have recourse to our own consciousness of what passes within our own mind.

If we are to pass a judgment upon any thing that relates to spirits in a state of union with animal nature, and the mixt properties of sensation, fancy, appetite, passion, pleasure and pain, which arise thence, we must consult our own sensations, and the other powers which we find in ourselves considered as men or creatures made up of a mind and an animal, and by just reasonings deduce proper consequences, and improve our knowledge in these subjects.

If we have occasion to judge concerning matters done in past ages, or in distant countries, and where we ourselves cannot be present, the powers of sense and reason,

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for the moſt part, are not ſufficient to inform us, and we muſt therefore have recourſe to the teſtimony of others: And this is either divine or human.

In matters of mere human prudence, we ſhall find the greateſt advantage by making wiſe obſervations on our own conduct, and the conduct of others, and a ſurvey of the events attending ſuch conduct. Experience in this caſe is equal to a natural ſagacity, or rather ſuperior. A treaſure of obſervations and experiences, collected by wiſe men, is of admirable ſervice here. And perhaps there is nothing in the world of this kind equal to the ſacred book of Proverbs, even if we look on it as a mere human writing.

In queſtions of natural religion, we muſt exerciſe the faculty of reaſon which God hath given us; and, ſince he has been pleaſed to afford us his word, we ſhould confirm and improve, or correct our reaſonings on this ſubject by the divine aſſiſtance of the Bible.

In matters of revealed religion, that is, Chriſtianity, Judaiſm, &c. which we could never have known by the light of nature, the word of God is our only foundation and chief light; though here our reaſon muſt be uſed both to find out the true meaning of God in his word, and to derive juſt inferences from what God has written, as well to judge of the credentials whereby divine teſtimony is diſtinguiſhed from mere human teſtimony or from impoſture.

As divine revelation can never contradict right reaſon, for they are two great lights given us by our Creator for our conduct, ſo reaſon ought by no means to aſſume to itſelf a power to contradict divine revelation.

Though revelation be not contrary to reaſon, yet there are four claſſes wherein matters of revelation may be ſaid to riſe above, or go beyond our reaſon.

1. When revelation aſſerts two things of which we have clear ideas, to be joined, whoſe connection or agreement is not diſcoverable by reaſon; as when ſcripture informs us, that *The dead ſhall riſe*, that *The earth ſhall be burnt up*, and the *Man Chriſt Jeſus ſhall return from heaven*; none of theſe things could ever be found out or proved by reaſon.

2. When revelation affirms any propoſition, while reaſon has no clear and diſtinct ideas of the ſubject or of the

predicate; as, *God created all things by Jesus Christ: By the* Urim *and* Thummim *God gave forth divine oracles.* The predicate of each of these propositions, is to us an obscure idea, for we know not what was the peculiar agency of Jesus Christ when God the Father created the world by him; nor have we any clear and certain conception what the Urim and Thummim were, nor how God gave answers to his people by them.

3. When revelation, in plain and express language, declares some doctrine which our reason at present knows with evidence and certainty, how or in what sense to reconcile to some of its own principles: as, that the child Jesus is the mighty God, Isa. ix. 6. which proposition carries a seeming opposition to the unity and spirituality of the Godhead, which are principles of reason.

4. When two propositions or doctrines are plainly asserted by divine revelation, which our reason at present knows not how or in what sense, with evidence and certainty, to reconcile with one another; as, *The Father is the only true God,* John xvii. 3. and yet Christ is over all, God blessed for ever, Rom. ix. 5.

Now divine revelation having declared all these propositions, reason is bound to receive them, because it cannot prove them to be utterly inconsistent or impossible, though the ideas of them, may be obscure, though we ourselves see not the rational connexion of them, and though we knew not certainly how to reconcile them. In these cases, reason must submit to faith; that is, we are bound to believe what God asserts, and wait till he shall clear up that which seems dark and difficult, and till the mysteries of faith shall be farther explained to us either in this world or the world to come*, and reason itself dictates the submission.

Direction VII. "It is very useful to have some general principles of truth settled in the mind, whose evidence is great and obvious, that they may be always ready at hand to assist us in judging of the great variety of things which occur. These may be called first notions, or fundamental principles; for, though many of them are deduced from

* See something more on this subject, Direct. II. preceding, and chap. v. sect. 6.

from each other, yet most or all of them may be called principles when compared with a thousand other judgments which we form under the regulation and influence of these primary propositions."

Every art and science, as well as the affairs of civil life and religion, have peculiar principles of this kind belonging to them. There are metaphysical, physical, mathematical, political, economical, medicinal, theological, moral and prudential principles of judgment. It would be too tedious to give a specimen of them all in this place. Those which are of the most universal use to us, both as men and as Christians, may be found in the following chapter among the rules of judgment about particular objects.

Direction VIII. "Let the degrees of your assent to every proposition bear an exact proportion to the different degrees of evidence." Remember this is one of the greatest principles of wisdom that man can arrive at in this world, and the best human security against dangerous mistakes in speculation or practice.

In the nature of things of which our knowledge is made up, there is infinite variety in their degrees of evidence. And, as God hath given our minds a power to suspend their assent till the evidence be plain, so we have a power to receive things which are proposed to us with a stronger or weaker belief, in infinite variety of degrees, proportionable to their evidence. I believe that planets are inhabited, and I believe that the earth rolls among them yearly round the sun; but I do not believe both these propositions with an equal firmness of assent, because the arguments for the latter are drawn from mathematical observations; but the arguments for the former are but probable conjectures and moral reasonings. Yet neither do I believe either these propositions so firmly, as I do that the earth is about twenty-four thousand miles round, because the mathematical proof of this is much easier, plainer and stronger. And yet farther, when I say that the earth was created by the power of God, I have still a more infallible assurance of this than of all the rest, because reason and scripture join to assure me of it.

Direction IX. "Keep your mind always open to receive truth, and never set limits to your own improvement.

ment. Be ready always to hear what may be objected againſt your favorite opinions, and thoſe which have had longeſt poſſeſſion of your aſſent. And if there ſhould be any new and uncontroulable evidence brought againſt theſe old or beloved ſentiments, do not wink your eyes faſt againſt the light, but part with any thing for the ſake of truth: Remember when you overcome an error you gain truth, the victory is on your ſide, and the advantage is all your own."

I confeſs thoſe grand principles of belief and practice which univerſally influence our conduct, both with regard to this life and the life to come, ſhould be ſuppoſed to be well ſettled in the firſt years of our ſtudies; ſuch as, the exiſtence and providence of God, the truth of Chriſtianity, the authority of ſcripture, the great rules of morality, &c. We ſhould avoid a light fluttering genius, ever ready to change our foundations, and to be carried about with every wind of doctrine. To guard againſt which inconvenience, we ſhould labour with earneſt diligence and fervent prayer, that our moſt fundamental and important points of belief and practice may be eſtabliſhed upon juſt grounds of reaſon and ſcripture, when we come to years of diſcretion, and fit to judge for ourſelves in ſuch important points. Yet, ſince it is poſſible that the folly or prejudices of younger years may have eſtabliſhed perſons in ſome miſtaken ſentiments, even in very important matters, we ſhould always hold ourſelves ready to receive any new advantage toward the correction or improvement even of our eſtabliſhed principles, as well as opinions of leſſer moment.

CHAP. V.

Special Rules to direct us in judging of particular Objects.

IT would be endleſs to run through all thoſe particular objects concerning which we have occaſion to paſs a judgment.

judgment at one time or another. Things of the most frequent occurrence, of the widest extent, and of the greatest importance, are the objects and exercises of sense, of reason, and speculation; the matters of morality, religion, and prudence, of human and divine testimony, together with the essays of reasoning upon things past and future. Special rules relating to all these will be the subject of the following sections.

SECT. I.

Principles and Rules of Judgment concerning the Objects of SENSE.

THOUGH our senses are sometimes liable to be deceived, yet when they are rightly disposed, and fitly exercised about their proper objects with the just assistance of reason, they give us sufficient evidence of truth.

This may be proved by an argument drawn from the wisdom, goodness, and faithfulness of God our Creator. It was he gave us our senses, and he would not make us of such a constitution as to be liable to perpetual deception, and unavoidable error, in using these faculties of sense in the best manner we are capable of, about those very things which are the proper object of them.

This may be proved also by the ill consequences that would follow from the supposition of the contrary. If we could have no certainty of the dictates of our senses, we could never be sure of any of the common affairs and occurrences of life. Men could not transact any of their civil or moral concerns with any certainty of justice; nor indeed could we eat or drink, walk or move, with safety. Our senses direct us in all these.

Again, the matters of religion depend in some measure upon the certainty of the dictates of sense; for faith comes by hearing; and it is to our senses that God appeals in working miracles to prove his own revelation. Now if, when our eyes and ears, and other organs of sense are rightly disposed and exercised about their proper objects, they were always liable to be deceived, there could be no

knowledge of the gospel, no proof of divine revelation by visions, voices, or miracles.

Our senses will discover things near us and round about us, which are necessary for our present state, with sufficient exactness; and things distant also, so far as they relate to our necessary use of them.

Nor is there need of any more accurate rules for the use of our senses, in the judgment of all the common affairs of life, or even of miraculous and divine operations, than the vulgar part of mankind are sufficiently acquainted with by nature, and by their own daily observations.

But if we would express these rules in a more exact manner, how to judge by the dictates of our senses, they should be represented thus:

1. We must take care that the organs of our senses be rightly disposed, and not under the power of any distemper or considerable decay; as, for instance, that our eyes are not tinctured with the jaundice, when we could judge of colours, lest we pronounce them all yellow: That our hands are not burning in a fever, nor benumbed with frost or the palsy, when we would judge of the heat or coldness of any object: That our palate be not vitiated by any disease, or by some other improper taste, when we would judge of the true taste of any solid or liquid. This direction relates to all our senses; but the following rules chiefly refer to our sight.

2. We must observe whether the object be at a proper distance; for, if it be too near or too far off, our eyes will not sufficiently distinguish many things which are properly the objects of sight; and therefore (if possible) we must make nearer approaches to the object, or remove farther from it, till we have obtained that due distance which gives us the clearest perception.

3. We must not employ our sight to take a full survey at once of objects that are too large for it; but we must view them by parts, and then judge of the whole: Nor must our senses judge of objects too small, for some things which appear through glasses to be really and distinctly existent, are either utterly invisible, or greatly confused, when we would judge of them by the naked eye.

4. We must place ourselves in such a position toward the object,

object, or place the object in such a position toward our eye, as may give us the clearest representation of it; for a different position greatly alters the appearance of the shape of bodies. And for this reason we should change the position both of the eye and the object in some cases, that by viewing the object in several appearances, we may pass a more compleat and certain judgment concerning it.

5. We must consider what the medium is by which objects are represented to our senses; whether it be thinner or thicker; whether it be air or vapour, or water, or glass, &c. whether it be duly enlightened or dusky, whether it reflect or refract, or only transmit the appearance of the object; and whether it be tinctured with any particular colour: Whether it be moving or at rest.

6. We must sometimes use other helps to assist our senses; and, if we make use of glasses, we must make all just allowances for the thickness or thinness of them, for the clearness or dulness, for the smoothness or roughness, for the plainness, the convexity or concavity of them, and for the distance at which these glasses are placed from the eye, or from the object, (or from one another, if there be two or more glasses used,) and all this according to the rules of art. The same sort of caution should be used also in mediums which assist the hearing, such as speaking-trumpets, hearing-trumpets, &c.

7. If the object may be proposed to more senses than one, let us call in the substance of some other senses to examine it, and this will increase the evidence of what one sense dictates. For example, Our ear may assist our eye in judging of the distance of bodies which are both visible and sonorous, as an exploded cannon, or a cloud charged with thunder. Our feeling may assist our sight in judging of the kind, the shape, situation, or distance of bodies that are near at hand, as whether a garment be silk or stuff, &c. So, if I both see, hear, and embrace my friend, I am sure he is present.

8. We should also make several trials, at some distant times, and in different circumstances, comparing former experiments with latter, and our own observations with those of other persons.

It is by such methods as these that modern philosophy has

has been so greatly improved by the use of sensible experiments.

SECT. II.

Principles and Rules of Judgment in Matters of Reason *and* Speculation.

IT is by reason we judge both in matters of speculation and practice; there peculiar rules which relate to things practical, whether they be matters of religion, morality, or prudence; yet many things in this section may be applied to practical inquiries and matters of faith, though it chiefly relates to knowledge, or speculations of reason.

1. Whatsoever clear ideas we can join together without inconsistency, are to be counted possible, because almighty power can make whatsoever we can conceive.

2. From the mere possibility of a thing we cannot infer its actual existence; nor from the non-existence of it we infer its impossibility.

Note, The idea of God seems to claim an exemption from this general rule; for, if he be possible, he certainly exists, because the very idea includes eternity; and he cannot begin to be: If he exist not, he is impossible for the very same reason.

3. Whatsoever is evidently contained in the idea of any thing, may be affirmed of that thing with certainty. Reason is contained in the idea of a man; and existence is contained in the idea of God; and therefore we may affirm God exists, and man is reasonable.

4. It is impossible that the same thing should be, and not be at the same time, and in the same respect. Hence it follows, that two contradictory ideas cannot be joined in the same part of the same subject, at the same time, and in the same respects: Or that two contradictory propositions can never be both true.

5. The more we converse with any subject in its various properties, the better knowledge of it we are likely to attain; and by frequent and repeated inquiries and experiments, reasonings and conversations about it, we confirm

firm our true judgments of that thing, and correct our former mistakes.

6. Yet, after our utmost inquiries, we can never be assured by reason, that we know all the powers and properties of any finite being.

7. If finite beings are not adequately known by us, much less the things infinite: For it is of the nature of a finite mind not to be able to comprehend what is infinite.

8. We may judge and argue very justly and certainly concerning infinites, in some parts of them, or so far as our ideas reach, though the infinity of them hath something incomprehensible in it. And this is built on the general rule following, namely,

9. Whatsoever is sufficiently clear and evident, ought not to be denied, though there are other things belonging to the same subject which cannot be comprehended. I may affirm many things with certainty concerning human souls, their union with bodies, concerning the divisibility of matter, and the attributes of God, though many other things relating to them are all darkness to us.

10. If any opinion proposed has either no arguments, or equal arguments for and against it, we must remain in perfect suspence about it, till convincing evidence appear on one side.

11. Where present necessity of action does not constrain us to determine, we should not immediately yield up our assent to mere probable arguments, without due reserve, if we have any reasonable hope of obtaining greater light and evidence on one side or the other: for, when the balance of the judgment once resigns its equilibrium or neutrality to a mere probable argument, it is too ready to settle itself on that side, so that the mind will not easily change that judgment, though bright and strong evidence appear afterwards on the other side.

12. Of two opinions, if one has unanswerable difficulties attending it, we must not reject it immediately, till we examine whether the contrary opinion has not difficulties as unanswerable.

13. If each opinion has objections against it, which we cannot answer, or reconcile, we should rather embrace that

that which has the leaſt difficulties in it, and which has the beſt arguments to ſupport it: And let our aſſent bear proportion to the ſuperior evidence.

14. If any doctrine hath very ſtrong and ſufficient light and evidence to command our aſſent, we ſhould not reject it becauſe there is an objection or two againſt it which we are not able to anſwer; for, upon this foot a common Chriſtian would be baffled out of every article of his faith, and muſt renounce even the dictates of his reaſon and his ſenſes; and the moſt learned man perhaps would hold but very few of them faſt: For ſome objections which attend the ſacred doctrine of the eternity and the omnipreſence of God, and the philoſophical doctrines of light, atoms, ſpace, motion, &c. are hardly ſolvable to this day.

15. Where two extremes are propoſed, either in matters of ſpeculation or practice, and neither of them has certain and convincing evidence, it is generally ſafeſt to take the middle way. Moderation is more likely to come near the truth than doubtful extremes. This is an excellent rule to judge of the characters and value of the greateſt part of perſons and things; for nature ſeldom deals in ſuperlatives. It is a good rule alſo by which to form our judgment in many ſpeculative controverſies; a reconciling medium in ſuch caſes does often beſt ſecure truth as well as peace.

16. When two different propoſitions have each a very ſtrong and cogent evidence, and do not plainly appear inconſiſtent, we may believe both of them, though we cannot at preſent ſee the way to reconcile them. Reaſon, as well as our own conſciouſneſs, aſſure us, that the will of man is free, and that multitudes of human actions are in that reſpect contingent; and yet reaſon and ſcripture aſſure us, that God foreknows them all; and this implies a certain fatality. Now, though learned men have not to this day hit on any ſo clear and happy method as is deſired to reconcile theſe propoſitions, yet ſince we do not ſee a plain inconſiſtency in them, we juſtly believe them both, becauſe their evidence is great.

17. Let us not therefore too ſuddenly determine in difficult matters, that two things are utterly inconſiſtent: For there are many propoſitions which may appear inconſiſtent

conſiſtent at firſt, and yet afterwards we find their conſiſtency, and the way of reconciling them may be made plain and eaſy: As alſo, there are other propoſitions which may appear conſiſtent at firſt, but after due examination we find their inconſiſtency.

18. For the ſame reaſon, we ſhould not call thoſe difficulties utterly inſolvable, or thoſe objections unanſwerable, which we are not preſently able to anſwer: Time and diligence may give farther light.

19. In ſhort, if we will ſecure ourſelves from error, we ſhould not be too frequent or haſty in aſſerting the certain conſiſtency or inconſiſtency, the abſolute univerſality, neceſſity, or impoſſibility of things, where there is not the brighteſt evidence. He is but a young and raw philoſopher, who, when he ſees two particular ideas evidently agree, immediately aſſerts them to agree univerſally, to agree neceſſarily, and that it is impoſſible it ſhould be otherwiſe. Or when he ſees evidently that two particular ideas happen to diſagree, he preſently aſſerts their conſtant and natural inconſiſtency, their utter impoſſibility of agreement, and calls every thing contrary to his opinion abſurdity and nonſenſe. A true philoſopher will affirm or deny with much caution and modeſty, unleſs he has thoroughly examined and found the evidence of every part of his aſſertion exceeding plain.

20. Let us have a care of building our aſſurance of any important point of doctrine upon one ſingle argument if there are more to be obtained. We ſhould not ſlight and reject all other arguments which ſupport the ſame doctrine, leſt if our favorite argument ſhould be refuted, and fail us, we ſhould be tempted to abandon that important principle of truth. I think this was a very culpable practice in Deſcartes, and ſome of his followers, who, when he had found out the argument for the exiſtence of God, derived from the idea of a moſt perfect and ſelf-exiſtent being, he ſeemed to deſpiſe and abandon all other arguments againſt Atheiſm.

21. If we happen to have our chief arguments for any opinion refuted, we ſhould not immediately give up the the opinion itſelf; for perhaps it may be a truth ſtill, and we may find it to be juſtly ſupported by other arguments, which we might once think weaker, or perhaps by new arguments which we knew not before. 22. We

22. We ought to esteem that to be sufficient evidence of a proposition, were both the kind and the force of the arguments or proofs are as great as the nature of the thing admits, and as the necessity or exigence of the case requires. So, if we have a credible and certain testimony that Christ rose from the dead, it is enough; we are not to expect mathematical or ocular demonstration for it; at least in our day.

23. Though we should seek what proofs may be attained of any proposition, and we should receive any number of arguments which are just and evident for the confirmation of the same truth, yet we must not judge of the truth of any proposition by the number of arguments which are brought to support it, but by the strength and weight of them: A building will stand firmer and longer on four large pillars of marble, than on ten of sand, or earth, or timber.

24. Yet where certain evidence is not to be found or expected, a considerable number of probable arguments carry great weight with them even in matters of speculation. That is a probable hypothesis in philosophy or in theology, which goes farthest toward the solution of many difficult questions arising on any subject.

SECT. III.

Principles and Rules of Judgment in Matters of Morality and Religion.

HERE it may be proper, in the first place, to mention a few definitions of words or terms.

By matters of morality and religion, I mean those things which relate to our duty to God, ourselves, or our fellow creatures.

Moral good, or virtue, or holiness, is an action or temper conformable to the rule of our duty. Moral evil, or vice, or sin, is an action or temper unconformable to the rule of our duty, or a neglect to fulfil it.

Note, The words vice or virtue, chiefly imply the relation of our actions to men and this world. Sin and holiness, rather imply their relation to God and the other world.

Natural

Natural good is that which gives us pleasure or satisfaction. Natural evil is that which gives us pain or grief.

Happiness consists in the attainment of the highest and most lasting natural good. Misery consists in suffering the highest and most lasting natural evil; that is in short, heaven or hell.

Though this be a just account of perfect happiness and perfect misery, yet whersoever pain overbalances pleasure there is a degree of misery; and whersoever pleasure overbalances pain, there is a degree of happiness.

I proceed now to lay down some principles and rules of judgment in matters of morality and religion.

1. The will of our Maker, whether discovered by reason or revelation, carries the highest authority with it, and is therefore the highest rule of duty to intelligent creatures; a conformity or nonconformity to it determines their actions to be morally good or evil.

2. Whatsoever is really an immediate duty toward ourselves, or toward our fellow-creatures, is more remotely a duty to God; and therefore in the practice of it we should have an eye to the will of God as our rule, and to his glory as our end.

3. Our wise and gracious Creator has closely united our duty and our happiness together; and has connected sin, or vice, and punishment; that is, he has ordained that the highest natural good and evil, should have a close connexion with moral good and evil, and that both in the nature of things, and by his own positive appointment.

4. Conscience should seek all due information, in order to determine what is duty, and what is sin, because happiness and misery depend upon it.

5. On this account our inclination to present temporal good, and our aversion to present temporal evil, must be wisely overbalanced by the consideration of future and eternal good or evil, that is, happiness or misery. And for this reason we should not omit a duty, or commit a sin, to gain any temporal good, or to avoid any temporal evil.

6. Though our natural reason in a state of innocence might be sufficient to find out those duties which were necessary for an innocent creature, in order to abide in the

favour of his Maker, yet in a fallen ſtate, our natural reaſon is by no means ſufficient to find out all that is neceſſary to reſtore a ſinful creature to the divine favour.

7. Therefore God hath condeſcended in various ages of mankind, to reveal to ſinful men what he requires of them in order to their reſtoration, and has appointed in his word ſome peculiar matters of faith and practice, in order to their ſalvation. This is called revealed religion; as the things knowable concerning God and our duty by the light of nature are called natural religion.

8. There are alſo many parts of morality and natural religion, or many natural duties relating to God, to ourſelves, and to our neighbours, which would be exceeding difficult and tedious for the bulk of mankind to find out and determine by natural reaſon; therefore it has pleaſed God, in this ſacred book of divine revelation, to expreſs the moſt neceſſary duties of this kind in a very plain and eaſy manner, and make them intelligible to ſouls of the loweſt capacity; or they may be very eaſily derived thence by the uſe of reaſon.

9. As there are ſome duties much more neceſſary, and more important than others are, ſo every duty requires our application to underſtand and practice it in proportion to its neceſſity and importance.

10. Where two duties ſeem to ſtand in oppoſition to each other, and we cannot practice both, the leſs muſt give way to the greater, and the omiſſion of the leſs is not ſinful. So ceremonial laws give way to moral: God will have mercy and not ſacrifice.

11. In duties of natural religion, we may judge of the different degrees of their neceſſity and importance by reaſon, according to their greater or more apparent tendency to the honour of God, and the good of men: But in matters of revealed religion, it is only divine revelation can certainly inform us what is moſt neceſſary and moſt important; yet we may be aſſiſted alſo in that ſearch by the exerciſes of reaſon.

12. In actions wherein there may be ſome ſcruple about the duty or lawfulneſs of them, we ſhould chooſe always the ſafeſt ſide, and abſtain as far as we can from the practice of things whoſe lawfulneſs we ſuſpect.

13. Points

13. Points of the greateſt importance in human life, or in religion, are generally the moſt evident, both in the nature of things, and in the word of God; and, where points of faith or practice are exceeding difficult to find out, they cannot be exceeding important. This propoſition may be proved by the goodneſs and faithfulneſs of God, as well as by experience and obſervation.

14. In ſome of the outward practices and forms of religion, as well as human affairs, there is frequently a preſent neceſſity of ſpeedy action one way or another: In ſuch a caſe, having ſurveyed arguments on both ſides, as far as our time and circumſtances admit, we muſt guide our practice by thoſe reaſons which appear moſt probable, and ſeem at that time to overbalance the reſt; yet always reſerving room to admit farther light and evidence, when ſuch occurrences return again. It is a preponderation of circumſtantial arguments that muſt determine our actions in a thouſand occurrences.

15. We may alſo determine upon probable arguments where the matter is of ſmall conſequence, and would not anſwer the trouble of ſeeking after certainty. Life and time are more precious than to have a large ſhare of them laid out in ſcrupulous inquiries, whether ſmoaking tobacco, or wearing a perriwig be lawful or no.

16. In affairs of greater importance, and which may have a long, laſting, and extenſive influence on our future conduct or happineſs, we ſhould not take up with probabilities, if certainty may be attained. Where there is any doubt on the mind in ſuch caſes, we ſhould call in the aſſiſtance of all manner of circumſtances, reaſons, motives, conſequences on all ſides: We muſt wait longer, and with earneſt requeſt ſeek human and divine advice before we fully determine our judgment and our practice; according to the old Roman ſentence, *Quod ſtatuendum eſt ſemel, deliberandum eſt diu*; "We ſhould be long in conſidering what we muſt determine once for all."

SECT.

SECT. IV.

Principles and Rules of Judgment in Matters of HUMAN PRUDENCE.

THE great design of prudence, as distinct from morality and religion, is to determine and manage every affair with decency, and to the best advantage.

That is decent which is agreeable to our state, condition, or circumstances, whether it be in behaviour, discourse, or action.

That is advantageous which attains the most and best purposes, and avoids the most and greatest inconveniencies.

As there is infinite variety in the circumstances of persons, things, actions, times and places, so we must be furnished with such general rules as are accommodable to all this variety by a wise judgment and discretion: For what is an act of consummate prudence in some times, places, and circumstances, would be consummate folly in others. Now these rules may be ranged in the following manner.

1. Our regard to persons or things should be governed by the degrees of concernment we have with them, the relation we have to them, or the expectation we have from them. These should be the measures by which we should proportion our diligence and application in any thing that relates to them.

2. We should always consider whether the thing we pursue be attainable; whether it be worthy our pursuit; whether it be worthy of the degree of pursuit; whether it be worthy of the means used in order to attain it. This rule is necessary both in matters of knowledge, and matters of practice.

3. When the advantages and disadvantages, conveniencies and inconveniencies of any action are balanced together, we must finally determine on that side which has the superior weight; and the sooner in things which are necessarily and speedily to be done or determined.

4. If advantages and disadvantages in their own nature are equal, then those which are most certain or likely as to the event should turn the scale of our judgment and determine our practice.

5. Where the improbabilities of success or advantage

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are greater than the probabilities, it is not prudence to act or venture, if the action may be attended with danger or loss equal to the proposed gain. It is proper to inquire whether this be not the case in almost all lotteries; for they that hold stakes will certainly secure part to themselves; and only the remainder being divided into prizes must render the improbability of gain to each adventurer greater than the probability.

6. We should not despise or neglect any real advantage, and abandon the pursuit of it, though we cannot attain all the advantages that we desire. This would be to act like children, who are fond of something which strikes their fancy most, and sullen and regardless of every thing else, if they are not humoured in that fancy.

7. Though a general knowledge of things be useful in science and in human life, yet we should content ourselves with a more superficial knowledge of those things which have the least relation to our chief end and design.

8. This rule holds good also in matters of business and practice, as well as in matters of knowledge; and therefore we should not grasp at every thing, lest in the end we attain nothing. Persons that either by an inconstancy of temper, or by a vain ambition, will pursue every sort of art and science, study, and business, seldom grow excellent in any one of them: And projectors who form twenty schemes seldom use sufficient application to finish one of them, or make it turn to good account.

9. Take heed of delaying and trifling amongst the means instead of reaching at the end. Take heed of wasting a life in mere speculative studies, which is called to action and employment: Dwell not too long in philosophical, mathematical, or grammatical parts of learning, when your chief design is law, physic, or divinity. Do not spend the day in gathering flowers by the way-side, lest night come upon you before you arrive at your journey's end, and then you will not reach it.

10. Where the case and circumstances of wise and good men resemble our own case and circumstances, we may borrow a great deal of instruction toward our prudent conduct from their example; as well as in all cases we may learn much from their conversation and advice.

11. After all other rules remember this, that mere speculation in matters of human prudence can never be a perfect director, without experience and observation. We may be content therefore in our younger years to commit some unavoidable mistakes in point of prudence, and we shall see mistakes enow in the conduct of others, both which ought to be treasured up amongst our useful observations, in order to teach us better judgment in time to come. Sometimes the mistakes, imprudencies, and follies, which ourselves or others have been guilty of, give us brighter and more effectual lessons of prudence, than the wisest counsels and the fairest examples could ever have done.

SECT. V.

Principles and Rules of Judgment in matters of Human Testimony.

THE evidence of human testimony is not so proper to lead us into the knowledge of the essence and inward nature of things, as to acquaint us with the existence of things, and to inform us of matters of fact both past and present. And though there be a great deal of fallibility in the testimony of men, yet there are some things we may be almost as certain of as that the sun shines, or that five twenties make an hundred. Who is there at London that knows any thing of the world, but believes there is such a city as Paris in France; that the Pope dwells at Rome; that Julius Cæsar was an emperor, or that Luther had a great hand in the reformation?

If we observe the following rules, we may arrive at such a certainty in many things of human testimony, as that it is morally impossible we should be deceived, that is, we may obtain a moral certainty.

1. Let us consider whether the thing reported be in itself possible; if not, it can never be credible, whosoever relates it.

2. Consider farther whether it be probable, whether there are any concurring circumstances to prove it, beside the mere testimony of the person that relates it. I confess,

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if these last conditions are wanting, the thing may be true, but then it ought to have the stronger testimony to support it.

3. Consider whether the person that relates it be capable of knowing the truth: Whether he be a skilful judge in such matters, if it be a business of art, or a nice appearance in nature, or some curious experiment in philosophy. But if it be a mere occurrence in life, a plain, sensible matter of fact, it is enough to inquire whether he who relates it were an eye or ear-witness, or whether he himself had it only by hearsay, or can trace it up to the original.

4. Consider whether the narrator be honest and faithful, as well as skilful: Whether he hath no bias upon his mind, no peculiar gain or profit by believing or reporting it, no interest or principle which might warp his own belief aside from truth; or which might tempt him to prevaricate, to speak falsly, or to give a representation a little different from the naked truth of things. In short, whether there be no occasion of suspicion concerning his report.

5. Consider whether several persons agree together in the report of this matter; and if so, then whether those persons who joined together in their testimony might not be supposed to combine together in a falshood. Whether they are persons of sufficient skill, probity and credit. It might be also inquired, whether they are of different nations, sects, parties, opinions, or interests. For the more divided they are in all these, the more likely is their report to be true, if they agree together in their account of the same thing; and especially if they persist in it without wavering.

6. Consider farther, whether the report were capable of being easily refuted at first if it had not been true; if so, this confirms the testimony.

7. Inquire yet again, whether there has been a constant, uniform tradition and belief of this matter, from the very first age or time when the thing was transacted, without any reasonable doubts or contradictions. Or,

8. If any part of it hath been doubted by any considerable persons, whether it has been searched out and afterwards

wards confirmed, by having all the ſcruples and doubts removed. In either of theſe caſes the teſtimony becomes more firm and credible.

9. Inquire, on the other hand, whether there are any conſiderable objections remaining againſt the belief of that propoſition ſo atteſted. Whether there be any thing very improbable in the thing itſelf. Whether any concurrent circumſtances ſeem to oppoſe it. Whether any perſon or perſons give a poſitive and plain teſtimony againſt it. Whether they are equally ſkilful and equally faithful as thoſe who aſſert it. Whether there be as many or more in number, and whether they might have any ſecret bias or influence on them to contradict it.

10. Sometimes the entire ſilence of a thing may have ſomething of weight toward the deciſion of a doubtful point of hiſtory, or a matter of human faith, namely, where the fact is pretended to be public, if the perſons who were ſilent about it were ſkilful to obſerve, and could not but know ſuch an occurrence; if they were engaged by principle or by intereſt to have declared it: And theſe things may tend to make a matter ſuſpicious, if it be not very well atteſted by poſitive proof.

11. Remember that in ſome reports there are more marks of falſhood than of truth, and in others there are more marks of truth than of falſhood. By a compariſon of all theſe things together, and putting every argument on one ſide and the other into the balance, we muſt form as good a judgment as we can which ſide preponderates; and give a ſtrong or a feeble aſſent or diſſent, or withhold our judgment entirely, according to greater or leſſer evidence, according to more plain or dubious marks of truth or falſhood.

12. Obſerve that in matters of human teſtimony there is often times a great mixture of truth and falſhood in the report itſelf: Some parts of the ſtory may be perfectly true, and ſome utterly falſe; and ſome may have ſuch a blended confuſion of circumſtances which are a little warpt aſide from the truth, and miſrepreſented, that there is need of good ſkill and accuracy to form a judgment concerning them, and determine which part is true, and which is falſe. The whole report is not to be believed,

becauſe

becauſe ſome parts are indubitably true, nor is the whole to be rejected, becauſe ſome parts are as evident falſhoods.

We may draw two remarkable obſervations from this ſection.

Obſerv. I. How certain is the truth of the Chriſtian religion, and particularly of the reſurrection of Chriſt, which is a matter of fact on which Chriſtianity is built! We have almoſt all the concurrent evidences that can be derived from human teſtimony joining to confirm this glorious truth. The fact is not impoſſible; concurrent circumſtances caſt a favourable aſpect on it; it was foretold by one who wrought miracles, and therefore not unlikely, nor unexpected: The apoſtles and firſt diſciples were eye and ear-witneſſes, for they converſed with their riſen Lord; they were the moſt plain, honeſt men in themſelves; the temptations of worldly intereſt did rather diſcourage their belief and report of it: They all agree in this matter, though they were men of different characters: *Phariſees* and *fiſhermen*, and *publicans*, men of *Judea* and *Galilee*; and perhaps ſome *heathens*, who were early converted: The thing might eaſily have been diſproved if it were falſe; it hath been conveyed by conſtant tradition and *writing* down to our times; thoſe who at firſt doubted, were afterwards convinced by certain proofs; nor have any pretended to give any proof of the contrary, but merely denied the fact with impudence, in oppoſition to all theſe evidences.

Obſerv. II. How weak is the faith which is due to a multitude of things in ancient human hiſtory! For, tho' many of theſe *criteria*, or marks of credibility, are found plainly in the more *general and public facts*, yet as to a multitude of *particular facts and circumſtances*, how deficient are they in ſuch evidence as ſhould demand our aſſent! Perhaps there is nothing that ever was done in all paſt ages, and which was not a public fact, ſo well atteſted as *the reſurrection of Chriſt*.

SECT.

SECT. VI.

Principles and Rules of Judgment in Matters of Divine Teſtimony.

AS human teſtimony acquaints us with matters of fact, both paſt and preſent, which lie beyond the reach of our perſonal notice; ſo divine teſtimony is ſuited to inform us both of the nature of things, as well as matters of fact, and of things future, as well as preſent or paſt.

Whatſoever is dictated to us by God himſelf, or by men who are divinely inſpired, muſt be believed with full aſſurance. Reaſon demands us to believe whatſoever divine revelation dictates: For God is perfectly wiſe, and cannot be deceived; he is faithful and good, and will not deceive his creatures: And when reaſon has found out the certain marks or credentials of divine teſtimony to belong to any propoſition, there remains then no farther inquiry to be made, but only to find out the true ſenſe and meaning of that which God has revealed, for reaſon itſelf demands the belief of it.

Now divine teſtimony or revelation requires theſe following credentials.

1. That the propoſitions or doctrines revealed be not inconſiſtent with reaſon; for intelligent creatures can never be bound to believe real inconſiſtencies. Therefore we are ſure the popiſh doctrine of tranſubſtantiation is not a matter of divine revelation, becauſe it is contrary to all our ſenſes and our reaſon, even in their proper exerciſes.

God can dictate nothing but what is worthy of himſelf, and agreeable to his own nature and divine perfections. Now many of theſe perfections are diſcoverable by the light of reaſon, and whatſoever is inconſiſtent with theſe perfections cannot be a divine revelation.

But let it be noted, that in matters of practice towards our fellow-creatures, God may command us to act in a manner contrary to what reaſon would direct antecedent to that command. So Abraham was commanded to offer up his ſon a ſacrifice: The Iſraelites were ordered to borrow of the Egyptians without paying them, and to plunder

plunder and slay the Inhabitants of Canaan: Because God has a sovereign right to all things, and can with equity dispossess his creatures of life, and every thing which he has given them, and especially such sinful creatures as mankind and he can appoint whom he pleases to be the instruments of this just dispossession or deprivation. So that these divine commands are not really inconsistent with right reason; for whatsoever is so cannot be believed, where that inconsistency appears.

2. Upon the same account, the whole doctrine of revelation must be consistent with itself; every part of it must be consistent with each other: And though in points of practice latter revelation may repeal or cancel former laws, yet in matters of belief no latter revelation can be inconsistent with what has been heretofore revealed.

3. Divine revelation must be confirmed by some divine and supernatural appearances, some extraordinary signs or tokens, visions, voices, or miracles wrought, or prophecies fulfilled. There must be some demonstrations of the presence and power of God, superior to all the powers of nature, or the settled connexion with God as Creator has established among his creatures in this visible world.

4. If there are any such extraordinary and wonderful appearances and operations brought to contest with or to oppose divine revelation, there must and always will be such a superiority on the side of that revelation which is truly divine, as to manifest that God is there. This was the case when the Egyptian sorcerer contended with Moses. But the wonders which Moses wrought did so far transcend the powers of the magicians, as made them confess it was the finger of God.

5. These divine appearances or attestations to revelation must be either known to ourselves, by our own personal observation of them, or they must be sufficiently attested by others, according to the principles and rules by which matters of human faith are to be judged in the foregoing section.

Some of those, who lived in the nations and ages where miracles were wrought, were eye and ear-witnesses of the truth and divinity of the revelation; but we who live in

these

these distant ages, must have them derived down to us by just and incontestible history and tradition. We also, even in these times, may see the accomplishment of some ancient predictions, and thereby obtain that advantage toward the confirmation of our faith in divine revelation, beyond what those persons enjoyed who lived when the predictions were pronounced.

6. There is another very considerable confirmation of divine testimony; and that is when the doctrines themselves, either on the publication or the belief of them, produce supernatural effects. Such were the miraculous powers which were communicated to believers in the first ages of Christianity, the conversion of the Jews or Gentiles, the amazing success of the gospel of Christ, without human aid, and in opposition to a thousand impediments; its power in changing the hearts and lives of ignorant and vicious heathens, and wicked and profane creatures in all nations, and filling them with a spirit of virtue, piety and goodness. Wherefover persons have found this effect in their own hearts, wrought by a belief of the gospel of Christ, they have a witness in themselves of the truth of it, and abundant reason to believe it divine.

Of the difference between reason and revelation, and in what sense the latter is superior, see more in Chap. II. sect. 9. and Chap. IV. direct. 6.

SECT. VII.

Principles and Rules of Judging concerning things Past, present, and to come, by the mere Use of Reason.

THOUGH we attain the greatest assurance of things past and future by divine faith, and learn many matters of fact, both past and present by human faith, yet reason also may in a good degree assist us to judge of matters of fact both past, present, and to come, by the following principles.

1. There is a system of beings round about us, of which we ourselves are a part, which we call the world, and in this world there is a course of nature, or a settled order of causes, effects, antecedents, concomitants, consequences, &c.

from

from which the author of nature doth not vary but upon very important occasions.

2. Where antecedents, concomitants, and consequents, causes and effects, signs and things signified, subjects and adjuncts, are necessarily connected with each other, we may infer the causes from the effects, and effects from causes, the antecedents from the consequents, as well as consequents from antecedents, &c. and thereby be pretty certain of many things both past, present and to come. It is by this principle that astronomers can tell what day and hour the sun and moon were eclipsed five hundred years ago, and predict all future eclipses as long as the world shall stand. They can tell precisely at what minute the sun rises or sets this day at Pekin in China, or what altitude the dog-star had at midnight or mid-noon in Rome, on the day when Julius Cesar was slain. Gardners upon the same principle can foretell the months when every plant will be in bloom, and the ploughman knows the weeks of harvest: We are sure, if there be a chicken, there was an egg: If there be a rainbow, we are certain it rains not far off: If we behold a tree growing on the earth, we know it has naturally a root under ground.

Where there is a necessary connection between causes and effects, antecedents and consequents, signs and things signified, we know also that like causes will have like effects, and proportionable causes will have proportionable effects, contrary causes will have contrary effects; and observing men may form many judgments by the rules of similitude and proportion, where the causes, effects, &c. are not entirely the same.

4. Where there is but a probable and uncertain connection between antecedents, concomitants and consequents, we can give but a conjecture, or a probable determination. If the clouds gather, or the weather-glass sinks, we suppose it will be rain. If a man spit blood frequently with coughing, we suppose his lungs are hurt: If very dangerous symptoms appear, we expect his death.

5. Where causes operate freely, with a liberty of indifference to this or the contrary, there we cannot certainly know what the effects will be: For it seems to be contingent

gent, and the certain knowledge of it belongs only to God. This is the case in the greatest part of human actions.

6. Yet wise men by a just observation of human nature, will give very probable conjectures in this matter also concerning things past, or things future, because human nature in all ages and nations has such a conformity to itself. By a knowledge of the tempers of men, and their present circumstances, we may be able to give a happy guess what their conduct will be, and what will be the event, by an observation of the like cases in former times. This made the Emperor Marcus Antonius to say, "By looking back into history, and considering the fate and revolutions of governments, you will be able to form a guess and almost prophesy upon the future. For things past, present, and to come, are strangely uniform, and of a colour; and are commonly cast in the same mould. So that upon the matter, forty years of human life may serve for a sample of ten thousands." Collier's Antonius, Book VII. sect. 50.

7. There are also some other principles of judging concerning the past actions of men in former ages, besides books, histories and traditions, which are the mediums of conveying human testimony; as we may infer the skill and magnificence of the ancients by some fragments of their statues, and ruins of their buildings. We know what Roman legions came into Great Britain by numbers of bricks dug out of the earth in some parts of the island, with the marks of some particular legion upon them, which must have been employed there in brick-making. We rectify some mistakes in history by statues, coins, old altars, utensils of war, &c. We confirm or disprove some pretended traditions and historical writings, by medals, images, pictures, urns, &c.

Thus I have gone through all those particular objects of our judgment which I first proposed, and have laid down principles and rules by which we may safely conduct ourselves therein. There is a variety of other objects, concerning which we are occasionally called to pass a judgment, namely, the characters of persons, the value and worth of things, the sense and meaning of particular writers, matters of wit, oratory, poesy, matters of equity in judicial

judicial courts, matters of traffic and commerce between man and man, which would be endleſs to enumerate.—But if the general and ſpecial rules of judgment which have been mentioned in theſe two laſt chapters are treaſured up in the mind, and wrought into the very temper of our ſouls in our younger years, they will lay a foundation for juſt and regular judgment concerning a thouſand ſpecial occurrences in the religious, civil and learned life.

THE

THIRD PART

OF

LOGIC.

Of Reasoning and Syllogism.

AS the first work of the mind is perception, whereby our ideas are framed, and the second is judgment, which joins or disjoins our ideas and forms a proposition, so the third operation of the mind is reasoning, which joins several propositions together, and makes a syllogism, that is, *an argument whereby we are wont to infer something that is less known, from truths which are more evident.*

In treating of this subject, let us consider more particularly,

1. *The nature of a* syllogism *and the parts of which it is composed.*

2. *The several kinds of* syllogisms, *with particular rules relating to them.*

3. *The doctrine of* sophisms, *or* false reasoning, *together with the means of avoiding them, and the manner of solving or answering them.*

4. *Some general rules to direct our* reasoning.

CHAP.

CHAP. I.

Of the Nature of a Syllogism, *and the Parts of which it is compoſed.*

IF the mere perception and compariſon of two ideas would always ſhew us whether they agree or diſagree; then all rational propoſitions would be matters of intelligence, or firſt principles, and there would be no uſe of reaſoning, or drawing any conſequences. It is the narrowneſs of the human mind which introduces the neceſſity of reaſoning. When we are unable to judge of the truth or falſhood of a propoſition in an immediate manner, by the mere contemplation of its ſubject and predicate, we are then conſtrained to uſe a medium, and to compare each of them with ſome third idea, that by ſeeing how far they agree or diſagree with it, we may be able to judge how far they agree or diſagree among themſelves: As, if there are two lines, A and B, and I know not whether they are equal or no, I take a third line C, or an inch, and apply it to each of them; If it agree with them both, then I infer that A and B are equal; but if it agree with one, and not with the other, then I conclude A and B are unequal: If it agree with neither of them, there can be no compariſon.

So if the queſtion be *whether God muſt be worſhipped*, we ſeek a third idea, ſuppoſe the idea of a Creator, and ſay,

Our Creator muſt be worſhipped;
God is our Creator;
Therefore *God muſt be worſhipped.*

The compariſon of this third idea with the two diſtinct parts of the queſtion, uſually requires two propoſitions, which are called the premiſes: The third propoſition which is drawn from them is the concluſion, wherein the queſtion itſelf is anſwered, and the ſubject and predicate joined either in the negative or the affirmative.

The foundation of all affirmative concluſions is laid in this general truth, that as far as two propoſed ideas agree to any third idea, they agree alſo among themſelves. The character

character of Creator agrees to God, and worſhip agrees to a Creator, therefore worſhip agrees to God.

The foundation of all negative concluſions is this, that where one of the two propoſed ideas agrees with the third idea, and the other diſagrees with it, they muſt needs diſagree ſo far alſo with one another; as, if *no ſinners are happy*, and if *angels are happy*, then *angels are not ſinners*.

Thus it appears what is the ſtrict and juſt notion of a ſyllogiſm: It is a ſentence or argument made up of three propoſitions ſo diſpoſed, as that the laſt is neceſſarily inferred from thoſe which go before, as in the inſtances which have been juſt mentioned.

In the conſtitution of a ſyllogiſm two things may be conſidered, viz. the matter and the form of it.

The matter of which a ſyllogiſm is made up, is three propoſitions; and theſe three propoſitions are made up of three ideas or terms variouſly joined.

The three terms are called the remote matter of a ſyllogiſm; and the three propoſitions the proxime or immediate matter of it.

The three terms are named the major, the minor, and the middle.

The predicate of the concluſion is called the *major term*, becauſe it is generally of a larger extenſion than the minor term, or the ſubject. The major and minor terms are called the extremes.

The middle term is the *third* idea invented, and diſpoſed in two propoſitions, in ſuch a manner as to ſhew the connexion between the major and minor term in the concluſion; for which reaſon the middle term itſelf is ſometimes called the argument.

That propoſition which contains the predicate of the concluſion connected with the middle term, is uſually called the *major propoſition*, whereas the *minor propoſition* connects the middle term with the ſubject of the concluſion, and is ſometimes called the *aſſumption*.

Note, This exact diſtinction of the ſeveral parts of a ſyllogiſm, and of the major and minor terms connected with the middle term in the major and minor propoſitions, does chiefly belong to ſimple or categorical ſyllogiſms, of

which

which we shall speak in the next chapter, though all syllogisms whatsoever have something analogical to it.

Note farther, That the major proposition is generally placed first, and the minor second, and the conclusion in the last place, where the syllogism is regularly composed and represented.

The form of a syllogism, is the framing and disposing of the premises according to art or just principles of reasoning, and the regular inference of the conclusion from them.

The act of reasoning, or inferring one thing from another, is generally expressed and known by the particle *therefore*, when the argument is formed according to the rules of art; though, in common discourse or writing, such *causal* particles as *for*, *because*, manifest the act of reasoning as well as the illative particles *then* and *therefore*: And wheresoever any of these words are used, there is a perfect syllogism expressed or implied, though perhaps the three propositions do not appear, or are not placed in regular form.

CHAP. II.

Of the Various Kinds of Syllogisms, with Particular rules Relating to Them.

SYLLOGISMS are divided into various kinds, either according to the question which is proved by them, according to the nature and composition of them, or according to the middle term, which is used to prove the question.

SECT. I.

Of Universal and Particular Syllogisms, both Negative and Affirmative.

ACCORDING to the question which is to be proved, so syllogisms are divided into universal affirmative, universal

univerſal negative, particular affirmative, and particular negative. This is often called a diviſion of ſyllogiſms drawn from the concluſion; for ſo many ſorts of concluſions there may be, which are marked with the letters, A, E, I, O.

In an univerſal affirmative ſyllogiſm, one idea is proved univerſally to agree with another, and may be univerſally affirmed of it, as, *Every ſin deſerves death, every unlawful wiſh is a ſin;* therefore *every unlawful wiſh deſerves death.*

In an univerſal negative ſyllogiſm, one idea is proved to diſagree with another idea univerſally, and may be thus denied of it; as, *No injuſtice can be pleaſing to God; all perſecution for the ſake of conſcience is injuſtice;* therefore *no perſecution for conſcience ſake can be pleaſing to God.*

Particular affirmative, and particular negative ſyllogiſms, may be eaſily underſtood by what is ſaid of univerſals, and there will be ſufficient examples given of all theſe in the next ſection.

The general principle upon which theſe univerſal and particular ſyllogiſms are founded, is this, Whatſoever is affirmed or denied univerſally of any idea, may be affirmed or denied of all the particular kinds of beings which are contained in the extenſion of that univerſal idea. So the deſert of death is affirmed univerſally of ſin, and an unlawful wiſh is one particular kind of ſin, therefore the deſert of death may be affirmed concerning an unlawful wiſh. And ſo of the reſt.

Note, In the doctrine of ſyllogiſms, a ſingular and an indefinite propoſition are ranked among univerſals, as was before obſerved in the doctrine of propoſitions.

SECT. II.

Of Plain, Simple Syllogiſms, and their Rules.

THE next diviſion of ſyllogiſms is into ſingle and compound. This is drawn from the nature and compoſition of them.

Single ſyllogiſms, are made up of three propoſitions:

Compound

Compound syllogisms contain more than three propositions, and may be formed into two or more syllogisms.

Single syllogisms, for distinction's sake, may be divided into * simple, complex, and conjunctive.

Those are properly called simple or categorical syllogisms, which are made up of three plain, single, or categorical propositions, wherein the middle term is evidently and regularly joined with one part of the question in the major proposition, and with the other in the minor, whence there follows a plain single conclusion; as *Every human virtue is to be sought with diligence; prudence is a human virtue;* therefore *prudence is to be sought diligently.*

Note, Though the terms of propositions may be complex; yet where the composition of the whole argument is thus plain, simple, and regular, it is properly called a simple syllogism, since the complexion does not belong to the syllogistic form of it.

Simple syllogisms have several rules belonging to them, which being observed, will generally secure us from false inferences: But these rules being founded on four general axioms, it is necessary to mention these *axioms* beforehand, for the use of those who will enter into the speculative reason of all these rules.

Axiom 1. Particular propositions are contained in universals, and may be inferred from them; but universals are not contained in particulars, nor can be inferred from them.

Axiom 2. In all universal propositions, the subject is universal: In all particular propositions, the subject is particular.

Axiom 3. In all affirmative propositions, the predicate has no greater extension than the subject; for its extension is restrained by the subject, and therefore it is always to be esteemed as a particular idea. It is by mere accident, if it ever be taken universally, and cannot happen but in such universal or singular propositions as are reciprocal.

Axiom 4. The predicate of a negative proposition is always

* As ideas and propositions are divided into single and compound, and single are subdivided into simple and complex; so there are the same divisions and subdivisions applied to syllogisms.

always taken univerſally, for in its whole extenſion it is denied of the ſubject; If we ſay, No ſtone is vegetable, we deny all ſorts of vegetation concerning ſtones.

The Rules of ſimple, regular Syllogiſms are theſe.

Rule I. *The middle term muſt not be taken twice particularly, but once at leaſt univerſally.* For if the middle term be taken for two different parts or kinds of the ſame univerſal idea, then the ſubject of the concluſion is compared with one of theſe parts, and the predicate with another part, and this will never ſhew whether that ſubject and predicate agree or diſagree: There will then be four diſtinct terms in the ſyllogiſm, and the two parts of the queſtion will not be compared with the ſame third idea; as if I ſay, Some men are pious, and ſome men are robbers, I can never infer that ſome robbers are pious, for the middle term men being taken twice particularly, it is not the ſame men who are ſpoken of in the major and minor propoſitions.

Rule II. *The terms in the concluſion muſt never be taken more univerſally than they are in the premiſes.* The reaſon is derived from the firſt axiom, that generals can never be inferred from particulars.

Rule III. *A negative concluſion cannot be proved by two affirmative premiſes.* For, when two terms of the concluſion are united or agree to the middle term, it does not follow by any means that they diſagree with one another.

Rule IV. *If one of the premiſes be negative, the concluſion muſt be negative.* For, if the middle term be denied of either part of the concluſion, it may ſhew that the terms of the concluſion diſagree, but it can never ſhew that they agree.

Rule V. *If either of the premiſes be negative, the concluſion muſt be particular.* This may be proved for the moſt part from the firſt axiom.

Theſe two laſt *rules* are ſometimes united in this ſingle ſentence, *The concluſion always follows the weaker part of the premiſes.* Now negatives and particulars are counted inferior to affirmatives and univerſals.

Rule VI. *From two negative premiſes nothing can be concluded.*

cluded. For they seperate the middle term both from the subject and predicate of the conclusion; and, when two ideas disagree to a third, we cannot infer that they either agree or disagree with each other.

Yet where the negation is a part of the middle term, the two premises may look like negatives according to the words, but one of them is *affirmative* in sense; as, *What has no thought cannot reason;* but *a worm has no thought;* therefore *a worm cannot reason.* The minor proposition does really affirm the middle term concerning the subject, namely, *a worm is what has no thought*, and thus it is properly in this syllogism an affirmative proposition.

Rule VII. *From two particular premises nothing can be concluded.* This rule depends chiefly on the first axiom.

A more laborious and accurate proof of these rules, and the derivation of every part of them in all possible cases, from the foregoing axioms, require so much time, and are of so little importance to assist the right use of reason, that it is needless to insist longer upon them here. See all this done ingeniously in the Logic called the *Art of Thinking*, Part III. Chap. III. *&c.*

SECT. II.

Of the Modes and Figures of simple Syllogisms.

SIMPLE syllogisms are adorned and surrounded in the common books of logic with a variety of inventions about moods and figures, wherein, by the artificial contexture of the letters A, E, I, and O, men have endeavoured to transform logic, or the art of reasoning, into a sort of mechanism, and to teach boys to syllogize, or frame arguments and refute them, without any real inward knowledge of the question. This is almost in the same manner as school-boys have been taught perhaps in their trifling years to compose Latin verses, that is, by certain tables and squares, with a variety of letters in them, wherein by counting every sixth, seventh, or eighth letter, certain Latin words should be framed in the form of hexameters or pentameters; and this may be done by those who know nothing of Latin or of verses.

I confeſs ſome of theſe logical ſubtilties have much more uſe than thoſe verſifying tables, and there is much ingenuity diſcovered in determining the preciſe number of ſyllogiſms that may be formed in every figure, and giving the reaſons of them; yet the light of nature, a good judgment, and due conſideration of things, tend more to true reaſoning, than all the trappings of moods and figures.

But leſt this book be charged with too great defects and imperfections, it may be proper to give ſhort hints of that which ſome *logicians* have ſpent ſo much time and paper upon.

All the poſſible compoſitions of three of the letters, A, E, I, O, to make three propoſitions, amount to ſixty-four; but fifty-four of them are excluded from forming true ſyllogiſms by the ſeven rules in the foregoing ſection: The remaining *ten* are variouſly diverſified by figures and moods into fourteen ſyllogiſms.

The figure of a ſyllogiſm is the proper diſpoſition of the middle term with the parts of the queſtion.

A mood is the regular determination of propoſitions according to their quantity and quality, that is, their univerſal or particular affirmation or negation; which are ſignified by certain artificial words wherein the conſonants are neglected, and theſe four vowels, A, E, I, O, are only regarded.

There are generally counted three figures.

In the firſt of them the middle term is the ſubject of the major propoſition, and the predicate of the minor. This contains four moods, called *Barbara*, *Celarent*, *Darii*, *Ferio*. And it is the excellency of this figure, that all ſorts of queſtions or concluſions may be proved by it, whether A, E, I, or O, that is, univerſal or particular, affirmative or negative; as,

Bar- Every wicked man is truly miſerable:
ba- All tyrants are wicked men;
ra. Therefore all tyrants are truly miſerable.

Ce- He that is always in fear is not happy;
la- Covetous men are always in fear;
rent. Therefore covetous men are not happy.

Da-

Da- Whatsoever furthers our salvation is good for us:
ri- Some afflictions further our salvation;
i. Therefore some afflictions are good for us.

Fe- Nothing that must be repented of is truly desirable;
ri- Some pleasures must be repented of;
o. Therefore there are some pleasures which are not truly desirable.

In the second figure the middle term is the predicate of *both* the premises; this contains four moods, namely, *Cesare*, *Camestres*, *Festino*, *Baroco*, and it admits only of negative conclusions; as,

Ce- No liar is fit to be believed;
sa- Every good Christian is fit to be believed;
re. Therefore no good Christian is a liar.

The reader may easily form examples of the rest.

The 3d figure requires that the middle term be the subject of both the premises. It has six moods, namely, Darapti, Felapton, Disamis, Datisi, Bocardo, Ferison: And it admits only of particular conclusions; as,

Da- Whosoever loves God shall be saved;
rap- All the lovers of God have their imperfections;
ti. Therefore some who have imperfections shall be saved.

I leave the reader to form examples of the rest.

The moods of these three figures are comprised in four Latin verses.

Barbara, *Celarent*, *Darii*, *Ferio*, quoque primæ.
Cesare, *Camestres*, *Festino*, *Baroco*, secundæ.
Tertia *Darapti* sibi vindicat, atque *Felapton*.
Adjungens *Disamis*, *Datisi*, *Bocardo*, *Ferison*.

The special rules of the three figures are these.

In the first figure the major proposition must always be universal, and the minor affirmative.

In the second figure also the major must be universal; and one of the premises, together with the conclusion, must be negative.

In the third figure the minor must be affirmative, and the conclusion always particular.

There is also a fourth figure, wherein the middle term is predicated in the major proposition, and subjected in the minor: But this is a very indirect and oblique manner of concluding, and is never used in the sciences, nor in human life, and therefore I call it useless.—Some logicians will allow it to be nothing else but a mere invertion of the first figure; the moods of it, namely, *Baralipton*, or *Barbari*, *Calentes*, *Dibatis*, *Fespamo*, *Fresison*, are not worthy to be explained by one example.

SECT. IV.

Of complex Syllogisms.

IT is not the mere use of complex terms in a syllogism that gives it this name, though one of the terms is usually complex; but those are properly called *complex syllogisms*, in which the middle term is not connected with the whole subject, or the whole predicate in two distinct propositions, but is intermingled and compared with them by parts, or in a more confused manner, in different forms of speech; as,

The sun is a senseless being;
The Persians worshipped the sun;
Therefore *the Persians worshipped a senseless being.*

Here the predicate of the conclusion is *worshipped a senseless being*, part of which is joined with the middle term *sun* in the major proposition, and the other part in the minor.

Though this sort of argument is confessed to be entangled or confused, and irregular, if examined by the rules of simple syllogisms; yet there are a great variety of arguments used in books of learning, and in common *life*, whose consequence is strong and evident, and which must be ranked under this head; as,

I.

I. Exclusive propositions will form a complex argument; as, *Pious men are the only favourites of heaven; True Christians are favourites of heaven;* Therefore *true Christians are pious men.* Or thus, *Hypocrites are not pious men;* Therefore *hypocrites are not favorites of heaven.*

II. Exceptive propositions will make such complex syllogisms; as, *None but physicians came to the consultation; The nurse is no physician;* Therefore *the nurse came not to the consultation.*

III. Or, comparative propositions; as, *Knowledge is better than riches; Virtue is better than Knowledge;* Therefore *virtue is better than riches.* Or thus, *A dove will fly a mile in a minute; A swallow flies swifter than a dove;* Therefore *a swallow will fly more than a mile in a minute.*

IV. Or inceptive and desitive propositions; as, *The fogs vanish as the sun rises;* But *the fogs have not yet begun to vanish;* Therefore *the sun is not yet risen.*

V. Or modal propositions; as, *It is necessary that a general understand the art of war;* But *Caius does not understand the art of war;* Therefore *it is necessary Caius should not be a general.* Or thus, *A total eclipse of the sun would cause darkness at noon: It is possible that the moon at that time may totally eclipse the sun:* Therefore *it is possible that the moon may cause darkness at noon.*

Besides all these, there is a great number of *complex syllogisms* which can hardly be reduced under any particular titles, because the forms of human language are so exceeding various; as,

Christianity requires us to believe what the apostles wrote; St. Paul is an apostle; Therefore *Christianity requires us to believe what St. Paul wrote.*

No human artist can make an animal; A fly or a worm is an animal; Therefore *no human artist can make a fly or a worm.*

The father always lived in London; The son always lived with the father; Therefore *the son always lived in London.*

The blossom soon follows the full bud; This pear-tree hath many full buds; Therefore *it will shortly have many blossoms.*

One hailstone never falls alone; But *a hailstone fell just now;* Therefore *others fell with it.*

Thunder seldom comes without lightening; But *it thundered yesterday;* Therefore *probably it lightened also.*

Moses

Moſes wrote before the Trojan war; The firſt Greek hiſtorians wrote after the Trojan war; Therefore *the firſt Greek hiſtorians wrote after Moſes**.

Now the force of all theſe arguments is ſo evident and concluſive, that though the form of the ſyllogiſm be never ſo irregular, yet we are ſure the inferences are juſt and true; for the premiſes, according to the reaſon of things, do really contain the concluſion that is deduced from them, which is a never-failing teſt of a true ſyllogiſm, as ſhall be ſhewn hereafter.

The truth of moſt of theſe complex ſyllogiſms may alſo be made to appear, if needful, by reducing them either to regular, ſimple ſyllogiſms, or to ſome of the conjunctive-ſyllogiſms which are deſcribed in the next ſection. I will give an inſtance only in the firſt, and leave the reſt to exerciſe the ingenuity of the reader.

The firſt argument may be reduced to a ſyllogiſm in Barbara, thus,

The ſun is a ſenſeleſs being;

What the Perſians worſhipped is the ſun;

Therefore *what the Perſians worſhipped is a ſenſeleſs being.* Though the concluſive force of his argument is evidently without this reduction.

SECT. V.

Of Conjunctive Syllogiſms.

THOSE are called *conjunctive ſyllogiſms*, wherein one of the premiſes, namely, the major, has diſtinct parts, which are joined by a conjunction, or ſome ſuch particle of ſpeech. Moſt times the major or minor, or both, are explicitly compound propoſitions; and generally the major propoſition is made up of two diſtinct parts or propoſitions, in ſuch a manner, as that by the aſſertion of one in the minor, the other is either aſſerted or denied in the

* Perhaps ſome of theſe ſyllogiſms may be reduced to thoſe which I call *connexive* afterward; but it is of little moment to what ſpecies they belong; for it is not any formal ſet of rules, ſo much as the evidence and force of reaſon, that muſt determine the truth or falſhood of all ſuch ſyllogiſms.

the conclusion: Or, by the denial of one in the minor, the other is either asserted or denied in the conclusion. It is hardly possible indeed to fit any short definition to include all the kinds of them; but the chief amongst them are the conditional syllogism, the disjunctive, the relative, and the connexive.

I. The conditional, or hypothetical syllogism, is that whose major or minor, or both, are conditional propositions; as, *If there be a God, the world is governed by providence*; but *there is a God*; therefore *the world is governed by providence*.

These syllogisms admit two sorts of true argumentation, where the major is conditional.

1. When the antecedent is asserted in the minor, that the consequent may be asserted in the conclusion; such is the preceding example. This is called *arguing from the position of the antecedent to the position of the consequent*.

2. When the consequent is contradicted in the minor proposition, that the antecedent may be contradicted in the conclusion; as, *If Atheists are in the right, then the world exists without a cause*: but *the world does not exist without a cause*; therefore *Atheists are not in the right*. This is called arguing *from the removing of the consequent to the removing of the antecedent*.

To remove the antecedent or consequent here, does not merely signify the denial of it, but the contradiction of it; for the mere denial of it by a contrary proposition will not make a true syllogism, as appears thus: *If every creature be reasonable, every brute is reasonable*; but *no brute is reasonable*; therefore *no creature is reasonable*. Whereas if you say in the minor, but *every brute is not reasonable*, then it would follow truly in the conclusion, therefore *every creature is not reasonable*.

When the antecedent or consequent are negative propositions, they are removed by an affirmative; as, *If there be no God, then the world does not discover creating wisdom*; but *the world does discover creating wisdom*; therefore *there is a God*. In this instance the consequent is removed or contradicted in the minor, that the antecedent may be contradicted in the conclusion. So in this argument of St. Paul,

Paul, 1 Cor. xv. *If the dead rise not, Christ died in vain;* but *Christ did not die in vain;* therefore *the dead shall rise.*

There are also two sorts of false arguing, namely, (1.) *From the removing of the antecedent to the removing of the consequent;* (2.) or, *From the position of the consequent, to the position of the antecedent.* Examples of these are easily framed; as,

(1.) *If a minister were a prince he must be honoured*; but *a minister is not a prince*; therefore *he must not be honoured.*

(2.) *If a minister were a prince he must be honoured*; but *a minister must be honoured*; therefore *he is a prince.*

Who sees not the ridiculous falshood of both these syllogisms?

Observ. I. If the subject of the antecedent and the consequent be the same, then the hypothetical syllogism may be turned into a categorical one; as, *If Cæsar be a king, he must be honoured*; but *Cæsar is a king*; therefore, &c. This may be changed thus, *Every king must be honoured;* but *Cæsar is a king*; therefore, &c.

Observ. II. If the major proposition only be conditional, the conclusion is categorical: But if the minor or both be conditional, the conclusion is also conditional; as, *The worshippers of images are idolaters*; *If the Papists worship a crucifix, they are worshippers of an image*; therefore, *If the Papists worship a crucifix, they are idolaters.* But this sort of syllogisms should be avoided as much as possible in disputation, because they greatly embarrass a cause: The syllogisms, whose major only is hypothetical, are very frequent, and used with great advantage.

II. A disjunctive syllogism, is when the major proposition is disjunctive; as *The earth moves in a circle or an ellipsis*; but *it does not move in a circle*; therefore *it moves in an ellipsis.*

A *disjunctive syllogism* may have many members or parts; thus, *It is either spring, summer, autumn, or winter*; but *It is not spring, autumn* or *winter*; therefore *It is summer.*

The true method of arguing here, is *from the assertion of one, to the denial of the rest*, or *from the denial of one or more, to the assertion of what remains*; but the major should be so framed, that the several parts of it cannot be true together, though one of them is evidently true.

III. A

III. A *relative syllogism* requires the major proposition to be relative; as, *Where Christ is, there shall his servants be*; but *Christ is in heaven*; therefore *his servants shall be there also*. Or, *As is the captain, so are his soldiers*; but *the captain is a coward*; therefore *his soldiers are so too*.

Arguments that relate to the doctrine of proportion must be referred to this head: as, *As two are to four, so are three to six*; but *two make the half of four*; therefore *three make the half of six*.

Besides these, there is another sort of syllogism which is very natural and common, and yet authors take very little notice of it, call it by an improper name, and describe it very defectively; and that is,

IV. A connexive syllogism. This some have called copulative; but it does by no means require the major to be a copulative nor a compound proposition (according to the definition given of it, Part II. chap. II. sect. 6.) but it requires that two or more ideas be so connected either in the complex subject or predicate of the major, that if one of them be affirmed or denied in the minor, common sense will naturally shew us what will be the consequence. It would be very tedious and useless to frame particular rules about them, as will appear by the following examples, which are very various, and yet may be farther multiplied.

(1.) *Meekness and humility always go together*; *Moses was a man of meekness*; therefore *Moses was also humble*. Or we may form this minor, *Pharaoh was no humble man*; therefore *he was not meek*.

(2.) *No man can serve God and mammon*; *the covetous man serves mammon*; therefore *he cannot serve God*. Or the minor may run thus, *The true Christian serves God*; therefore *he does not serve mammon*.

(3.) *Genius must join with study to make a great man*; *Florino has genius* but *he cannot study*; therefore *Florino will never be a great man*. Or thus, *Quintus studies hard*, but *has no genius*; therefore *Quintus will never be a great man*.

(4.) *Gulo cannot make a dinner without flesh and fish*; *there was no fish to be gotten to-day*; therefore *Gulo this day cannot make a dinner*.

(5.) *London and Paris are in different latitudes*; *the latitude*

tude of London is 51 ½ *degrees*; therefore *this cannot be the latitude of Paris.*

(6.) *The father and the son are of equal stature*; *the father is six feet high*; therefore *the son is six feet high also.*

(7.) *Joseph and Benjamin had one mother*; *Rachael was the mother of Joseph*; therefore *she was Benjamin's mother too.*

(8.) *Pride is inconsistent with innocence*; *Angels have innocence*; therefore *they have no pride.* Or thus, *Devils have pride*; therefore *they have not innocence.*

I might multiply other instances of these connexive syllogisms, by bringing in all sorts of exceptive, exclusive, comparative, and modal propositions, into the composition of them; for all these may be wrought into conjunctive, as well as into simple syllogisms, and thereby we may render them complex. But it would waste time and paper without equal profit.

Concerning these various kinds of conjunctive syllogisms, take these two observations.

Observ. I. Most of them may be transformed into categorical syllogisms by those who have a mind to prove the truth of them that way; or they may be easily converted into each other by changing the forms of speech.

Observ. II. These conjunctive syllogisms are seldom deficient or faulty in the form of them; for such a deficience would be discovered at first glance generally by common reason, without any artificial rules of logic: The chief care therefore is to see that the major proposition be true, upon which the whole force of the argument usually depends.

SECT. VI.

Of Compound Syllogisms.

WE properly call those compound syllogisms, which are made of two or more simple syllogisms, and may be resolved into them. The chief kinds are these; Epichirema, Dilemma, Prosyllogismus, and Sorites.

I. Epichirema is a syllogism which contains the proof of the major or minor, or both, before it draws the conclusion. This is often used in writing, in public speeches, and

and in common converſation; that ſo each part of the diſcourſe may be confirmed and put out of doubt, as it moves on toward the concluſion which was chiefly deſigned. Take this inſtance;

Sickneſs may be good for us, for it weans us from the pleaſures of life, and makes us think of dying;

But *we are uneaſy under ſickneſs, which appears by our impatience, complaints, groanings*, &c.

Therefore *we are uneaſy ſometimes under that which is good for us.*

Another inſtance you may ſee in Cicero's oration in defence of Milo, who had ſlain Clodius. His major propoſition is, that *it is lawful for one man to kill another who lies in wait to kill him*; which he proves from the cuſtom of nations, from natural equity, examples, &c. his minor is, that 'Clodius laid wait for Milo;' which he proves by his arms, guards, &c. and then infers the concluſion, that *it was lawful for Milo to kill Clodius.*

II. A dilemma is an argument which divides the whole into all its parts or members by a disjunctive propoſition, and then infers ſomething concerning each part which is finally inferred concerning the whole. Inſtances of this are frequent; as, *In this life we muſt either obey our vicious inclinations, or reſiſt them: To obey them, will bring ſin and ſorrow; to reſiſt them is laborious and painful*; Therefore *we cannot be perfectly free from ſorrow or pain in this life.*

A dilemma becomes faulty or ineffectual three ways: Firſt, When the members of the diviſion are not well oppoſed, or not fully enumerated; for then the major is falſe. Secondly, When what is aſſerted concerning each part is not juſt; for then the minor is not true. Thirdly, When it may be retorted with equal force upon him who utters it.

There was a famous ancient inſtance of this caſe, wherein a dilemma was retorted. Euathlus promiſed Protagoras a reward when he had taught him the art of pleading, and it was to be paid the firſt day that he gained any cauſe in the court. After a conſiderable time Protagoras goes to law with Euathlus for the reward, and uſes this dilemma: *Either the cauſe will go on my ſide, or on yours; if the cauſe goes on my ſide, you muſt pay me according to the ſentence of the judge: If the cauſe goes on your ſide, you muſt pay me according to your bargain*;

gain: Therefore *whether the cause goes for me or against me, you must pay me the reward.* But Euathlus retorted the dilemma thus: *Either I shall gain the cause or lose it*: *If I gain the cause, then nothing will be due to you according to the sentence of the judge*: But *if I lose the cause, nothing will be due to you according to my bargain*: Therefore, *whether I lose or gain the cause, I will not pay you, for nothing will be due to you.*

Note 1. A dilemma is usually described as though it always proved the absurdity, inconvenience, or unreasonableness of some opinion or practice; and this is the most common design of it; but it is plain, that it may be also used to prove the truth or advantage of any thing proposed; as, *In heaven we shall either have desires or not*: *If we have no desires, then we have full satisfaction*; *if we have desires, they shall be satisfied as fast as they arise*; Therefore *in heaven we shall be completely satisfied.*

Note 2. This sort of argument may be composed of three or more members, and may be called a *trilemma*.

III. A prosyllogism is when two or more syllogisms are so connected together, that the conclusion of the former is the major or the minor of the following; as *Blood cannot think; but the soul of man thinks*; therefore *the soul of man is not blood*; but *the soul of a brute is his blood*, according to the scripture; therefore *the soul of man is different from the soul of a brute.* See another instance in the *introduction* to this treatise, p. 11.

IV. A sorites, is when several middle terms are chosen to connect one another successively in several propositions, till the last proposition connects its predicate with the first subject—Thus, *All men of revenge have their souls often uneasy*; *uneasy souls are a plague to themselves*; *now to be one's own plague is folly in the extreme*; therefore *all men of revenge are extreme fools.*

The apostle, Rom. viii. 29. gives us an instance of this sort of argument, if it were reduced to exact form: *Whom he foreknew, those he predestinated*; *whom he predestinated, he called*; *whom he called, he justified*; *whom he justified, he glorified*; therefore *whom he foreknew he glorified.*

To these syllogisms it may not be improper to add induction, which is, when from several particular propositions we infer one general: as, *The doctrine of the Socinians cannot be proved from the gospels, it cannot be proved from the Acts of the Apostles, it cannot be proved from the epistles, nor the book of revelation*; therefore *it cannot be proved from the New Testament.*

Note,

Note, This ſort of argument is often defective, becauſe there is no due care taken to enumerate all the particulars on which the concluſion ſhould depend.

All theſe four kinds of ſyllogiſms in this ſection may be called redundant, becauſe they have more than three propoſitions. But there is one ſort of ſyllogiſm which is defective, and is called an *enthymem*, becauſe only the concluſion with one of the premiſes is expreſſed while the other is ſuppoſed and reſerved in the mind: Thus, *There is no true religion without good morals*; therefore *a knave cannot be truly religious*: Or thus, *it is our duty to love our neighbours as ourſelves*; therefore *there are but few who perform their duty.*

Note, This is the moſt common ſort of argument amongſt mankind both in writing and in ſpeaking; for it would take up too much time, and too much retard the diſcourſe to draw out all our arguments in mood and figure. Beſides, mankind love to have ſo much compliment paid to their underſtandings, as to ſuppoſe that they know the major or minor, which is ſuppreſſed and implied, when you pronounce the other premiſe and the concluſion.

If there be any debate about this argument, the ſyllogiſm muſt be completed, in order to try its force and goodneſs, by adding the abſent propoſitions.

SECT. VII.

Of the Middle Terms, of Common Places or Topics, and Invention of Arguments.

THE next diviſion of ſyllogiſms is according to the middle term, which is made uſe of in the proof of the propoſition. Now the middle term (as we have hinted before) is often called argument, becauſe the force of the ſyllogiſm depends upon it. We muſt make a little delay here to treat briefly of the doctrine of topics, or places whence middle terms or arguments are drawn.

All arts and ſciences have ſome general ſubjects which belong to them, which are called topics, or common-places; becauſe middle terms are borrowed, and arguments derived from them for the proof of the various propoſitions which we have occaſion to diſcourſe of.

The

The topics of grammar are etymology, noun, verb, conſtruction, ſignification, &c. The topics of logic are genus, ſpecies, difference, property, definition, diviſion, &c. The topics of ontology, or metaphyſics, are cauſe, effect, action, paſſion, identity, oppoſition, ſubject, adjunct, ſign, &c. The topics of morality, or ethics, are law, ſin, duty, authority, freedom of will, command, threatening, reward, puniſhment, &c. The topics of theology, are God, Chriſt, faith, hope, worſhip, ſalvation, &c.

To the ſeveral topics there belong particular obſervations, axioms, canons, or rules*, which are laid down in their proper ſciences; as,

Grammar hath ſuch canons, namely, *Words in a different conſtruction obtain a different ſenſe. Words derived from the ſame primitive may probably have ſome affinity in their original meaning*, &c.

Canons in logic are ſuch as theſe, *Every part of a diviſion ſingly taken muſt contain leſs than the whole. A definition muſt be peculiar and proper to the thing defined. Whatever is affirmed or denied of the genus, may be affirmed or denied of the ſpecies*, &c.

Metaphyſical canons are ſuch as theſe; *Final cauſes belong only to intelligent agents. If a natural and neceſſary cauſe operate, the effect will follow*, &c. and there are large catalogues of many more in each diſtinct ſcience.

Now it has been the cuſtom of thoſe who teach *logic* or *rhetoric*, to direct their diſciples, when they want an argument, to conſult the ſeveral topics which are ſuited to their ſubject of diſcourſe, and to rummage over the definitions, diviſions, and canons, that belong to each topic. This is called the invention of argument; and it is taught with much ſolemnity in ſome ſchools.

I grant there may be good uſe of this practice for perſons of a lower genius, when they are to compoſe any diſcourſe for the public; or for thoſe of ſuperior parts, to refreſh their memory, and revive their acquaintance with a ſubject which has been long abſent from their thoughts, or when their natural ſpirits labour under indiſpoſition and languor; but when a man of moderate ſagacity has made himſelf maſter of his theme by juſt diligence and inquiry,

* A canon is a propoſition declaring ſome property of the ſubject which is not expreſſed in the definition or diviſion of it.

inquiry, he has seldom need to run knocking at the doors of all the topics that he may furnish himself with argument or matter of speaking: And indeed it is only a man of sense and judgment that can use common places or topics well; for amongst this variety he only knows what is fit to be left out, as well as what is fit to be spoken.

By some logical writers this business of topics and invention is treated of in such a manner, with mathematical figures and diagrams, filled with the barbarous technical word, Napcas, Nipcis, Ropcros, Nosrop, &c. as though an ignorant lad were to be led mechanically in certain artificial harnesses and trammels to find out arguments to prove or refute any proposition whatsoever without any rational knowledge of the ideas. Now there is no need to throw words of contempt on such a practice; the very description of it carries reproof and ridicule in abundance.

SECT. VIII.

Of Several Kinds of Arguments and Demonstrations.

WE proceed now to the division of syllogisms according to the middle term; and in this part of our treatise the syllogisms themselves are properly called arguments, and are thus distributed.

I. Arguments are called grammatical, metaphysical, physical, moral, mechanical, theological, &c. according to the art, science, or subject, whence the middle term or topic is borrowed. Thus, if we prove that no man should steal from his neighbour, because the scripture forbids it, this is a theological argument: If we prove it from the laws of the land, it is political; but if we prove it from the principles of reason and equity, the argument is moral.

II. Arguments are either certain and evident, or doubtful and merely probable.

Probable arguments, are those whose conclusions are proved by some probable mediums; as, *This hill was once a church-yard, or a field of battle*, because *there are many human bones found here*. This is not a certain argument, for

human bones might have been conveyed there some other way.

Evident and certain arguments are called demonstrations; for they prove their conclusions by clear mediums and undoubted principles; and they are generally divided into these two sorts.

1. Demonstrations *à priori*, which prove the effect by its necessary cause; as I prove *the scripture is infallibly true*, because it is *the word of God who cannot lie.*

2. Demonstrations *a posteriori*, which infer the cause from its necessary effect; as, *I infer there hath been the hand of some artificer here*, because *I find a curious engine.* Or, *I infer there is a God, from the works of his wisdom in the visible world.*

The last of these is called *demonstratio tou oti*, because it proves only the existence of a thing; the first is named *demonstratio tou dioti*, because it shews also the cause of existence.

But *note*, That though these two sorts of arguments are most peculiarly called *demonstrations*, yet generally any strong and convincing argument obtains that name; and it is the custom of mathematicians to call their arguments *demonstrations*, from what medium soever they derive them.

III. Arguments are divided into artificial and inartificial.

An artificial argument is taken from the nature and circumstances of the things; and if the argument be strong, it produces a natural certainty; as, *The world was first created by God*, because *nothing can create itself.*

An inartificial argument, is the testimony of another, and this is called original, when our information proceeds immediately from the persons concerned, or from eye or ear witnesses of a fact: It is called tradition when it is delivered by the report of others.

We have taken notice before, that testimony is either divine or human. If the human testimony be strong, it produces a moral certainty; but divine testimony produces a supernatural certainty, which is far superior.

Note, Arguments taken from human testimony, as well as from laws and rules of equity, are called moral;

and

and indeed the same name is also applied to every sort of argument, which is drawn from the free actions of God, or the contingent actions of men, wherein we cannot arise to a natural certainty, but content ourselves with an high degree of probability, which in many cases is scarce inferior to natural certainty.

IV. Arguments are either direct or indirect. It is a direct argument, wherein the middle term is such as proves the question itself, and infers that very proposition which was the matter of inquiry. An indirect, or oblique argument, proves or refutes some other proposition, and thereby makes the thing inquired appear to be true by plain consequence.

Several arguments are called indirect; as, (1.) When some contradictory proposition is proved to be false, improbable or impossible: Or when upon supposition of the falshood, or denial of the original proposition, some absurdity is inferred. This is called a proof *per impossibile*, or a *reductio absurdum*. (2.) When some other proposition is proved to be true which is less probable, and thence it follows that the original proposition is true, because it is more probable. This is an argument *ex minus probabili ad magis*. (3.) When any other proposition is proved, upon which it was before agreed to yield the original question. This is an argument *ex concesso*.

V. There is yet another rank of arguments which have Latin names; their true distinction is derived from the topics or middle terms which are used in them, though they are called an address to our judgment, our faith, our ignorance, our profession, our modesty, and our passions.

1. If an argument be taken from the nature or existence of things, and addressed to the reason of mankind, it is called *argumentum ad judicium*.

2. When it is borrowed from some convincing testimony, it is *argumentum ad fidem*, an address to our *faith*.

3. When it is drawn from any insufficient medium whatsoever, and yet the opposer has not skill to refute or answer it, this is *argumentum ad ignorantiam*, an address to our *ignorance*.

4. When it is built upon the professed principles or opinions of the person with whom we argue, whether the opinions

opinions be true or falſe, it is named *argumentum ad hominem*, an addreſs to our *profeſſed principles*. St. Paul often uſes this argument when he reaſons with the Jews, and when he ſays, *I ſpeak as a man*.

5. When the argument is fetched from the ſentiments of ſome wiſe, great, or good men, whoſe authority we reverence, and dare hardly oppoſe, it is called *argumentum ad verecundiam*, an addreſs to our *modeſty*.

6. I add finally, When an argument is borrowed from any topics which are ſuited to engage the inclinations and paſſions of the hearers on the ſide of the ſpeaker, rather than to convince the judgment, this is *argumentum ad paſſiones*, an addreſs to the *paſſions*; or if it be made publicly, it is called *ad populum*, or an *appeal to the people*.

After all theſe diviſions of ſyllogiſms or arguments ariſing from the middle term, there is one diſtinction proper to be mentioned which ariſes from the premiſes. An argument is called uniform, when both the premiſes are derived from the ſame ſpring of knowledge, whether it be ſenſe, reaſon, conſciouſneſs, human faith, or divine faith: But when the two premiſes are derived from different ſprings of knowledge, it is called a mixt argument.

Whether the concluſion muſt be called *human* or *divine*, when one or both premiſes are matters of *divine faith*, but the concluſion is drawn by *human reaſon*, I leave it to be diſputed and determined in the ſchools of theology.

Thus the ſecond chapter is finiſhed, and a particular account given of all the chief kinds of ſyllogiſms, or arguments which are made uſe of among men, or treated of in logic, together with ſpecial rules for the formation of them, ſo far as is neceſſary.

If a ſyllogiſm agrees with the rules which are given for the conſtruction and regulation of it, it is called a *true argument*: If it diſagrees with theſe rules, it is a *paralogiſm*, or *falſe argument*: But when a falſe argument puts on the face and appearance of a true one, then it is properly called a *ſophiſm* or *fallacy*, which ſhall be the ſubject of the next chapter.

CHAP.

CHAP. III.

The Doctrine of Sophisms.

FROM truth nothing can really follow but what is true: Whensoever therefore we find a false conclusion drawn from premises which seem to be true, there must be some fault in the deduction or inference; or else one of the premises is not true in the sense in which it is used in that argument.

When an argument carries the face of truth with it, and yet leads us into mistake, it is a sophism; and there is some need of a particular description of these fallacious arguments, that we may with more ease and readiness detect and solve them.

SECT. I.

Of several kinds of Sophisms, and their Solution.

AS the rules of right judgment, and of good ratiocination, often coincide with each other, so the doctrine of prejudices, which was treated of in the second part of logic, has anticipated a great deal of what might be said on the subject of sophisms; yet I shall mention the most remarkable springs of false argumentation, which are reduced by logicians to some of the following heads.

I. The first sort of sophism is called *ignoratio elenchi*, or a mistake of the *question*; that is, when something else is proved which has neither any necessary connexion or consistency with the thing inquired, and consequently gives no determination to the inquiry, though it may seem at first sight to determine the question; as, if any should conclude that St. Paul was not a native Jew, by proving that he was born a Roman; or if they should pretend to determine that he was neither Roman nor Jew, by proving that he was born at Tarsus in Cilicia: These sophisms are refuted by shewing that all these three may be true; for he was born of Jewish parents in the city of Tarsus, and by some peculiar privilege granted to his parents, or his

native city, he was born a denizen of Rome. Thus there is neither of these three characters of the apostle inconsistent with each other, and therefore the proving one of them true does not refute the others.

Or if the question be proposed, Whether excess of wine can be hurtful to him that drinks it? And the sophister should prove that it revives his spirits, it exhilerates his soul, it gives a man courage, and makes him strong and active; and then he takes it for granted that he had proved his point.

But the respondent may easily shew, that though wine may do all this, yet it may be finally hurtful both to the soul and body of him that drinks it to excess.

Disputers, when they grow warm, are ready to run into this fallacy: They dress up the opinion of their adversary as they please, and ascribe sentiments to him which he doth not acknowledge; and when they have with a great deal of pomp attacked and confounded these images of straw of their own making, they triumph over their adversary as though they had utterly confuted his opinion.

It is a fallacy of the same kind which a disputant is guilty of, when he finds that his adversary is too hard for him, and that he cannot fairly prove the question first proposed; he then with slyness and subtility turns the discourse aside to some other kindred point which he can prove, and exults in that new argument wherein his opponent never contradicted him.

The way to prevent this fallacy is by keeping the eye fixt on the precise point of dispute, and neither wandering from it ourselves, nor suffering our antagonist to wander from it, or substitute any thing else in its room.

II. The next sophism is called *petitio principii*, or a *supposition of what is not granted*; that is, when any proposition is proved by the same proposition in other words, or by something that is equally uncertain and disputed: As if any one undertake to prove that the human soul is extended through all the parts of the body, because it resides in every member, which is but the same thing in other words. Or, if a Papist should pretend to prove that *his religion is the only catholic religion*; and is *derived from Christ*

Christ and his apostles, because it agrees with the doctrine of all the fathers of the church, all the holy martyrs, and all the Christian world throughout all ages: Whereas this is the great point in contest, whether their religion does agree with that of all the ancient and the primitive Christians, or no.

III. That sort of fallacy which is called a circle, is very near akin to the *petitio principii*; as when one of the premises in a syllogism is questioned and opposed, and we intend to prove it by the conclusion: Or, when in a train of syllogisms we prove the last by recurring to what was the conclusion of the first: The Papists are famous at this sort of fallacy, when they prove the scriptures to be the word of God by the authority or infallible testimony of their church; and, when they are called to shew the infallible authority of their church, they pretend to prove it by the scriptures.

IV. The next kind of sophism is called *non causa pro causa*, or the *assignation of a false cause*. This the Peripatetic philosophers were guilty of continually; when they told us that certain beings, which they called *substantial forms*, were the springs of colour, motion, vegetation, and the various operations of natural beings in the animate and inanimate world; when they informed us that Nature was terribly afraid of a vacuum, and that this was the cause why the water would not fall out of a long tube if it was turned upside down: The moderns as well as the ancients fall often into this fallacy, when they positively assign the reasons of natural appearances, without sufficient experiments to prove them.

Astrologers are overrun with this sort of fallacies, and they cheat the people grosly, by pretending to tell fortunes, and to deduce the cause of the various occurrences in the lives of men from the various position of the stars and planets, which they call aspects.

When comets and eclipses of the sun and moon are construed to signify the fate of princes, the revolution of states, famine, wars and calamities of all kinds, it is a fallacy that belongs to this rank of sophisms.

There is scarce any thing more common in human life than this sort of human argument. If any two accidental

al events happen to concur, one is presently made the cause of the other. If Titius wronged his neighbour of a guinea, and in six months after he fell down and broke his leg, weak men will impute it to the divine vengeance on Titius for his former injustice. This sophism was found also in the early days of the world: For, when holy Job was surrounded with uncommon miseries, his own friends inferred, that he was a most heinous criminal, and charged him with aggravated guilt as the cause of his calamities; though God himself by a voice from heaven solved this uncharitable sophism, and cleared his servant Job of that charge.

How frequent is it among men to impute crimes to wrong persons? We too often charge that upon the wicked contrivance and premeditated malice of a neighbour, which arose merely from ignorance, or from unguarded temper. And, on the other hand, when we have a mind to excuse ourselves, we practise the same sophism, and charge that upon our inadvertence or our ignorance, which perhaps was designed wickedness. What is really done by a necessity of circumstances, we sometimes impute to choice. And again, we charge that upon necessity which was really desired and chosen.

Sometimes a person acts out of judgment, in opposition to his inclination; another person perhaps acts the same thing out of inclination, and against his judgment. It is hard for us to determine with assurance, what are the inward springs and secret causes of every man's conduct; and therefore we should be cautious and slow in passing a judgment where the case is not exceeding evident; And if we should mistake, let it rather be on the charitable, than on the censorious side.

It is the same sophism that charges mathematical learning with leading the minds of men to scepticism and infidelity, and as unjustly accuses the new philosophy of paving the way to heresy and schism. Thus the reformation from Popery has been charged with the murder and blood of millions, which in truth is to be imputed to the tyranny of the princes and the priests, who would not suffer the people to reform their sentiments and their practices according to the word of God. Thus Christianity

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in the primitive ages was charged by the Heathens with all the calamities which befel the Roman empire, because the Christians renounced the heathen gods and idols.

The way to relieve ourselves from those sophisms, and to secure ourselves from the danger of falling into them, is an honest and diligent inquiry into the real nature and causes of things, with a constant watchfulness against all those prejudices that might warp the judgment aside from truth in that inquiry.

V. The next is called *fallacia accidentis*, or a sophism wherein we pronounce concerning the nature and essential properties of any subject according to something which is merely accidental to it. This is akin to the former, and is also very frequent in human life. So if opium or the Peruvian bark has been used imprudently or unsuccessfully, whereby the patient has received injury, some weaker people absolutely pronounce against the use of the bark or opium upon all occasions whatsoever, and are ready to call them poison. So wine has been the accidental occasion of drunkenness and quarrels; learning and printing may have been the accidental cause of sedition in a state; the reading of the bible, by accident has been used to promote heresies or destructive errors; and for these reasons they have been all pronounced *evil things*. Mahomet forbade his followers the use of wine; the Turks discourage learning in their dominions; and the Papists forbid the scriptures to be read by the laity. But how very unreasonable are these inferences, and these prohibitions which are built upon them!

VI. The next sophism borders upon the former; and that is, when we argue from that which is true in particular circumstances, to prove the same thing true absolutely, simply, and abstracted from all circumstances; this is called in the schools *a sophism a dicto secundum quid ad dictum simpliciter*; as, *That which is bought in the shambles is eaten for dinner; Raw meat is bought in the shambles*; therefore *raw meat is eaten for dinner*. Or thus, *Livy writes fables and improbabilities when he describes prodigies and omens*; therefore *Livy's Roman history is never to be believed in any thing*. Or thus, *There may be some mistakes of transcribers in some part of the scriptures*; therefore *scripture alone is not a safe guide for our faith*.

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This ſort of ſophiſm has its reverſe alſo; as when we argue from that which is true ſimply and abſolutely, to prove the ſame thing true in all particular circumſtances whatſoever *; as if a *traitor* ſhould argue from the ſixth commandment, *Thou ſhalt not kill a man*, to prove that *he himſelf ought not to be hanged*: Or if a *madman* ſhould tell me, *I ought not to withhold his ſword from him, becauſe no man ought to withhold the property of another.*

Theſe two laſt ſpecies of ſophiſms are eaſily ſolved, by ſhewing the difference betwixt things in their abſolute nature, and the ſame things ſurrounded with peculiar circumſtances, and conſidered in regard to ſpecial times, places, perſons and occaſions; or by ſhewing the difference between a moral and a metaphyſical univerſality, and that the propoſition will hold good in one caſe, but not in the other.

VII. The ſophiſms of compoſition and diviſion come next to be mentioned.

The ſophiſm of compoſition, is when we infer any thing concerning ideas in a compound ſenſe, which is only true in a divided ſenſe. And when it is ſaid in the goſpel that Chriſt made the blind to ſee, and the deaf to hear, and the lame to walk, we ought not to infer hence that Chriſt performed contradictions; but thoſe who were blind before, were made to ſee, and thoſe who were deaf before, were made to hear, &c. So when the ſcripture aſſures us, The worſt of ſinners may be ſaved; it ſignifies only, that they who have been the worſt of ſinners may repent and be ſaved, not that they ſhall be ſaved in their ſins. Or if any one ſhould argue thus, *Two and three are even and odd; Five are two and three;* therefore *five are even and odd.* Here that is very falſly inferred concerning *two and three in union*, which is only true of them divided.

The *ſophiſm* of *diviſion*, is when we infer the ſame thing concerning ideas in a divided ſenſe, which is only true in a compounded ſenſe; as, if we ſhould pretend to prove that every

* This is arguing from a moral univerſality, which admits of ſome exceptions, in the ſame manner as may be argued from metaphyſical or a natural univerſality, which admits of no exception.

every soldier in the Grecian army put an hundred thousand Persians to flight, because the Grecian soldiers did so. Or if a man should argue thus, *Five is one number; Two and three are five*; therefore *two and three are one number*.

This sort of sophism is committed when the word *All* is taken in a collective and a distributive sense, without a due distinction; as, if any one should reason thus; *All the musical instruments of the Jewish temple made a noble concert; The harp was a musical instrument of the Jewish temple*; therefore *the harp made a noble concert*. Here the word *All* in the major is collective, whereas such a conclusion requires that the word *All* should be distributive.

It is the same fallacy when the universal word *All* or *No* refers to species in one proposition, and to individuals in another; as, *All animals were in Noah's Ark*; therefore *No animals perished in the flood*: Whereas in the premise *all animals* signifies *every kind of animals*, which does not exclude or deny the drowning of a thousand individuals.

VIII. The last sort of sophism arises from our abuse of the ambiguity of words, which is the largest and most extensive kind of fallacy; and indeed several of the former fallacies might be reduced to this head.

When the words or phrases are plainly equivocal, they are called *sophisms* of *equivocation*; as, if we should argue thus: *He that sends forth a book into the light, desires it to be read*; *He that throws a book into the fire, sends it into the light*; therefore *He that throws a book into the fire desires it to be read*.

This sophism, as well as the foregoing, and all of the like nature, are solved by shewing the different senses of the words, terms or phrases. Here *light* in the major proposition signifies the *public view of the world*; in the minor it signifies the *brightness of flame and fire*; and therefore the syllogism has four terms, or rather, it has no middle term, and proves nothing.

But where such gross equivocations and ambiguities appear in arguments, there is little danger of imposing upon ourselves or others. The greatest danger, and which we are perpetually exposed to in reasoning, is, where the two senses or significations of one term are near akin, and not plainly distinguished, and yet they are really sufficiently different in their sense, to lead us into great mistakes, if

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we are not watchful. And indeed the greateſt part of controverſies in the ſacred or civil life ariſe from the different ſenſes that are put upon words, and the different ideas which are included in them; as have been ſhewn at large in the FIRST PART OF LOGIC, Chap. IV. which treats of words and terms.

There is, after all theſe, another ſort of ſophiſm, which is wont to be called an *imperfect enumeration*, or a *falſe induction*, when from a few experiments or obſervations men infer general theorems and univerſal propoſitions. But this is ſufficiently noticed in the foregoing chapter, where we treated of that ſort of ſyllogiſm which is called *induction*.

SECT. II.

Two general Teſts of true Syllogiſms, and Methods of Solving all ſophiſms.

BESIDES the ſpecial deſcription of true ſyllogiſms and ſophiſms already given, and the rules by which the one are framed, and the other refuted, there are theſe two general methods of reducing all ſyllogiſms whatſoever to a teſt of their truth or falſhood.

I. The firſt is, that the premiſes muſt, at leaſt implicitly, contain the concluſion; or thus, *One of the premiſes muſt contain the concluſion, and the other muſt ſhew that the concluſion is contained in it.* The reaſon of this rule is this; when any propoſition is offered to be proved, it is neceſſary to find another propoſition which confirms it, which may be called the containing propoſition; but becauſe the ſecond muſt not contain the firſt in an expreſs manner, and in the ſame words,* therefore it is neceſſary that a third or oſtenſive propoſition be found out, to ſhew that the ſecond propoſition contains the firſt, which was to be proved. Let us make an experiment of this ſyllogiſm: *Whoſoever is*

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* It is confeſſed that conditional and diſjunctive major propoſitions do expreſsly contain all that is in the concluſion; but then it is not in a certain and concluſive manner, but only in a dubious form of ſpeech, and mingled with other terms; and therefore it is not the ſame expreſs propoſition.

a slave to his natural inclinations is miserable; *The wicked man is a slave to his natural inclinations*; therefore *The wicked man is miserable.* Here it is evident that the major proposition contains the conclusion; for, under the general character of a slave to natural inclinations, a wicked man is contained or included; and the minor proposition declares it; whence the conclusion is evidently deduced, *that the wicked man is miserable.*

In many affirmative syllogisms we may suppose either the major or the minor to contain the conclusion, and the other to shew it; for there is no great difference. But in negative syllogisms it is the negative proposition that contains the conclusion, & the affirmative proposition shewit; as, *Every wise man masters his passions*; *No angry man masters his passions*; therefore *No angry man is wise.* Here it is more natural to suppose the minor to be the contained proposition; it is the minor implicitly denies wisdom concerning an angry man, because mastering the passions is included in wisdom, and the major shews it.

Note, This rule may be applied to complex and conjunctive, as well as simple syllogisms, and is adapted to shew the truth or falshood of any of them.

II. The second is this; *As the terms in every syllogism are usually repeated twice, so they must be taken precisely in the same sense in both places:* For the greatest part of mistakes that arise in forming syllogisms is derived from some little difference in the sense of one of the terms in the two parts of the syllogism wherein it is used. Let us consider the following sophisms.

1. *It is a sin to kill a man*; *A murderer is a man*; therefore *It is a sin to kill a murderer.* Here the word *kill* in the first proposition signifies to kill unjustly, or without law; in the conclusion it is taken absolutely for putting a man to death in general, and therefore the inference is good.

2. *What I am, you are not*; but *I am a man*; therefore *You are not a man.* This is a relative syllogism: But if it be reduced to a regular categorical form, it will appear there is ambiguity in the terms, thus; *What I am, is a man*; *You are not what I am*; therefore *you are not a man.* Here *what I am* in the major proposition is taken

ſpecially for *my nature;* but in the minor propoſition the ſame words are taken *individually* for *my perſon;* therefore the *inference* muſt be falſe, for the ſyllogiſm does not take the term *what I am* both times in the ſame ſenſe.

3. *He that ſays you are an animal ſays true;* but *He that ſays you are a gooſe, ſays you are an animal;* therefore *He that ſays you are a gooſe ſays true.* In the major propoſition the word *animal* is the predicate of an incidental propoſition; which incidental propoſition being affirmative, renders the predicate of it particular, according to chap. II. ſect. 2. axiom 3. and conſequently the word *animal* there ſignifies only *human animality.* In the minor propoſition the word *animal,* for the ſame reaſon, ſignifies the *animality of a gooſe;* whereby it becomes an *ambiguous* term, and unfit to build the concluſion upon. Or if you ſay, the word *animal* in the minor is taken for *human animality,* then the minor is evidently *falſe.*

It is from this laſt general teſt of ſyllogiſms that we derive the cuſtom of the reſpondent in anſwering the arguments of the opponent, which is to diſtinguiſh upon the major or minor propoſition, and declare which term is uſed in two ſenſes, and in what ſenſe the propoſition may be true, and in what ſenſe it is falſe.

CHAP. IV.

Some General Rules to direct our Reaſoning.

MOST of the general and ſpecial directions given to form our judgments aright in the preceding part of logic might be rehearſed here; for the judgments which we paſs upon things are generally built on ſome ſecret reaſoning or argument by which the propoſition is ſuppoſed to be proved. But there may be yet ſome farther aſſiſtances given to our reaſoning powers in their ſearch after truth, and an obſervation of the following rules will be of great importance for that end.

RULE I. "Accuſtom yourſelves to clear and diſtinct ideas,

ideas, to evident propositions, to strong and convincing arguments.' Converse much with those friends, and those books, and those parts of learning, where you meet with the greatest clearness of thought, and force of reasoning. The mathematical sciences, and particularly arithmetic, geometry, and mechanics, abound with these advantages: And if there were nothing valuable in them for the uses of human life, yet the very speculative parts of this sort of learning are well worth our study; for by perpetual examples they teach us to conceive with clearness, to conduct our ideas and propositions in a train of dependence, to reason with strength and demonstration, and to distinguish between truth and falsehood. Something of these sciences should be studied by every man who pretends to learning, and that, as Mr. Locke expresses it, not so much to make us mathematicians, as to make us reasonable creatures.

We should gain such a familiarity with evidence of perception and force of reasoning, and get such a habit of discerning clear truths, that the mind may be soon offended with obscurity and confusion: Then we shall, as it were, naturally and with ease restrain our minds from rash judgment, before we attain just evidence of the proposition which is offered to us; and we shall with the same ease, and, as it were naturally, seize and embrace every truth that is proposed with just evidence.

The habit of conceiving clearly, of judging justly, and of reasoning well, is not to be attained merely by the happiness of constitution, the brightness of genius, the best natural parts, or the best collection of logical precepts: It is custom and practice that must form and establish this habit. We must apply ourselves to it till we perform all this readily, and without reflecting on rules. A coherent thinker and a strict reasoner is not to be made at once by a set of rules, any more than a good painter or musician may be formed extempore, by an excellent lecture on music or painting. It is of infinite importance therefore in our younger years to be taught both the value and the practice of conceiving clearly and reasoning right: For, when we are grown up to the middle of life, or past it, it is no wonder that we should not learn good reasoning,

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any more than that an ignorant clown ſhould not be able to learn fine language, dancing, or a courtly behaviour, when his ruſtic airs have grown up with him till the age of forty.

For want of this care, ſome perſons of rank and education dwell all their days among obſcure ideas; they conceive and judge always in confuſion; they take weak arguments for demonſtration; they are led away with the diſguiſes and ſhadows of truth. Now, if ſuch perſons happen to have a bright imagination, a volubility of ſpeech, and a copiouſneſs of language, they not only impoſe many errors upon their own underſtandings, but they ſtamp the image of their own miſtakes upon their neighbours alſo, and ſpread their errors abroad.

It is a matter of juſt lamentation and pity, to conſider the weakneſs of the common multitude of mankind in this reſpect, how they receive any thing into their aſſent upon the moſt trifling grounds. True reaſoning hath very little ſhare in forming their opinions. They reſiſt the moſt convincing arguments by an obſtinate adherence to their prejudices, and believe the moſt improbable things with the greateſt aſſurance. They talk of the abſtruſeſt myſteries, and determine upon them with the utmoſt confidence, and without juſt evidence either from reaſon or revelation. A confuſed heap of dark and inconſiſtent ideas, make up a good part of their knowledge in matters of philoſophy as well as religion, having never been taught the uſe and value of clear and juſt reaſoning.

Yet it muſt be ſtill confeſſed that there are ſome myſteries in religion, both natural and revealed, as well as ſome abſtruſe points in philoſophy, wherein the wiſe as well as the unwiſe muſt be content with obſcure ideas. There are ſeveral things, eſpecially relating to the inviſible world, which are unſearchable in our preſent ſtate, and therefore we muſt believe what revelation plainly dictates, though the ideas may be obſcure. Reaſon itſelf demands this of us: but we ſhould ſeek for the brighteſt evidence both of the ideas, and of the connexion of them, whereſoever it is attainable.

Rule II. "Enlarge your general acquaintance with things daily, in order to attain a rich furniture of topics,

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or middle terms, whereby those propositions which occur may be either proved or disproved; but especially meditate and inquire with great diligence and exactness into the nature, properties, circumstances, and relations of the particular subject about which you judge or argue." Consider its causes, effects, consequences, adjuncts, opposites, signs, &c. so far as is needful to your present purpose. You should survey a question round about, and on all sides, and extend your views as far as possible to every thing that has a connexion with it. This practice has many advantages in it; as,

1. It will be a means to suggest to your mind proper topics for argument about any proposition that relates to the same subject.

2. It will enable you with greater readiness and justness of thought to give an answer to any sudden question upon that subject, whether it arises in your own mind, or is proposed by others.

3. This will instruct you to give a plainer and speedier solution of any difficulties that may attend the theme of your discourse, and to refute the objections of those who have espoused a contrary opinion.

4. By such a large survey of the whole subject in all its properties and relations, you will be better secured from inconsistencies, that is, from asserting or denying any thing in one place, which contradicts what you have asserted or denied in another: And to attain these ends, an extensiveness of understanding, and a large memory, are of unspeakable service.

One would be ready to wonder sometimes how easily great and wise and learned men are led into assertions in some parts of the same treatise, which are found to be scarce consistent with what they have asserted in other places: But the true reason is, the narrowness of the mind of man, that it cannot take in all the innumerable properties and relations of one subject with a single view; and therefore, whilst they are intent on one particular part of their theme, they bend all their force of thought to prove or disprove some proposition that relates to that part, without a sufficient attention to the consequences which may flow from it, and which may unhappily effect

another part of the same subject; and by this means they are sometimes led to say things which are inconsistent. In such a case, the great dealers in dispute and controversy take pleasure to cast nonsense and self-contradiction on their antagonist, with huge and hateful reproaches. For my part, I rather choose to pity human nature, whose necessary narrowness of understanding exposes us all to some degrees of this frailty. But the most extensive survey possible of our whole subject is the best remedy against it. It is our judging and arguing upon a partial view of things, that exposes us to mistakes, and pushes us into absurdities, or at least to the very borders of them.

Rule III. "In searching the knowledge of things, always keep the precise point of the present question in your eye. Take heed that you add nothing to it while you are arguing, nor omit any part of it." Watch carefully lest any new ideas slide in to mingle themselves either with the subject or the predicate. See that the question be not altered by the ambiguity of any word taken in different senses; nor let any secret prejudices of your own, or the sophistical arts of others, cheat your understanding, by changing the question, or shuffling in anything else in its room.

And for this end it is useful to keep the precise matter of inquiry as *simple* as may be, and disengaged from a complication of ideas, which do not necessarily belong to it. By admitting a complication of ideas, and taking too many things at once into one question, the mind is sometimes dazzled and bewildered; and the truth is lost in such a variety and confusion of ideas; whereas, by limiting and narrowing the question, you take a fuller survey of the whole of it.

By keeping the single point of inquiry in our constant view, we shall be secured from sudden, rash, and impertinent responses and determinations, which some have obtruded instead of solutions and solid answers, before they perfectly knew the questions.

Rule IV. "When you have exactly considered the precise point of inquiry, or what is unknown in the question, then consider what, and how much you know already of this question, or of the ideas and terms of which it

is

is compoſed." It is by a compariſon of the known and unknown parts of the queſtion together that you find what reference the part known hath unto, or what connection it hath with the thing that is ſought: Thoſe ideas, whereby the known and unknown parts of the queſtion are connected, will furniſh you with middle terms or arguments whereby the thing propoſed may be proved or diſproved.

In this part of your work, namely, comparing ideas together, take due time, and be not too haſty to come to a determination, eſpecially in points of importance. Some men, when they ſee a little agreement or diſagreement between ideas, they preſume a great deal, and ſo jump into the concluſion: This is a ſhort way to fancy, opinion and conceit, but a moſt unſafe and uncertain way to true knowledge and wiſdom.

Rule V. "In chooſing your middle terms or arguments to prove any queſtion, always take ſuch topics as are ſureſt, and leaſt fallible, and which carry the greateſt evidence and ſtrength with them." Be not ſo ſolicitous about the number, as the weight of your arguments, eſpecially in proving any propoſition which admits of natural certainty, or of complete demonſtration. Many times we do injury to a cauſe by dwelling upon trifling arguments. We amuſe our hearers with uncertainties, by multiplying the number of feeble reaſonings, before we mention thoſe which are more ſubſtantial, concluſive, and convincing. And too often we yield up our aſſent to mere probable arguments, where certain proofs may be obtained.

Yet it muſt be confeſſed, there are many caſes wherein the growing numbers of probable arguments increaſes the degree of probability, and gives a great and ſufficient confirmation to the truth which is ſought; as,

(1.) When we are inquiring the true ſenſe of any word or phraſe, we are more confirmed in the ſignification of it, by finding the ſame expreſſion ſo uſed in ſeveral authors, or in ſeveral places of the ſame author.

(2.) When we are ſearching out the true meaning or opinion of any writer, or inquiring into any ſacred doctrine of ſcripture, we come to a ſurer determination of the truth by ſeveral diſtinct places wherein the ſame thing is

expreſſed

expreſſed or plainly implied; becauſe it is not ſo probable that an honeſt ſkilful reader ſhould miſtake the meaning of the writer in many places, as he may in one or two.

(3.) When we would prove the importance of any ſcriptural doctrine or duty, the multitude of texts wherein it is repeated and inculcated upon the reader ſeems naturally to inſtruct us that it is a matter of greater importance than other things which are but ſlightly or ſingly mentioned in the Bible.

(4.) In ſearching out matters of fact in times paſt or in diſtant places, in which caſe moral evidence is ſufficient, and moral certainty is the utmoſt which can be attained, here we derive a greater aſſurance of the truth of it by a number of perſons, or a multitude of circumſtances concurring to bear witneſs to it.

(5.) From many experiments in natural philoſophy we more ſafely infer a general theorem, than we can from one or two.

(6.) In matters which require preſent practice, both ſacred and civil, we muſt content ourſelves oftentimes with a mere preponderation of probable reaſons or arguments. Where there are ſeveral reaſons on each ſide, for and againſt a thing that is to be done or omitted, a ſmall argument added to the heap may juſtly turn the balance on one ſide, and determine the judgment, as I have noted in the Second Part of Logic.

To conclude: A growing acquaintance with matters of learning, and a daily improvement of our underſtandings in affairs human and divine, will beſt teach us to judge and diſtinguiſh in what caſes the number of arguments adds to their weight and force: It is only experience can fully inform us when we muſt be determined by probable topics, and when we muſt ſeek and expect demonſtrations.

Rule VI. "Prove your concluſion (as far as poſſible) by ſome propoſitions that are in themſelves more plain, evident, and certain, than the concluſion; or at leaſt ſuch as are more known, and more intelligible to the perſon whom you would convince." If we ſhall neglect this rule, we ſhall endeavour to enlighten that which is obſcure by ſomething equally or more obſcure, and to confirm that which is doubtful by ſomething equally or more uncertain.

uncertain. Common sense dictates to all men, that it is impossible to establish any truth, and to convince others of it, but by something that is better known to them than that truth is.

Rule VII. "Labour in all your arguings to enlighten the understanding, as well as to conquer and captivate the judgment." Argue in such a manner as may give a natural, distinct, and solid knowledge of things to your hearers, as well as to force their assent by a mere proof of the question. Now, to attain this end, the chief topic or medium of your demonstration should be fetched, as much as possible, from the nature of the thing to be proved, or from those things which are most naturally connected with it.

Geometricians sometimes break this rule without necessity, two ways, namely,

1. When they prove one proposition only by shewing that absurdities will follow if the contradictory proposition be supposed or admitted: This is called *Reductio ad absurdum*,* or *Demonstratio per impossibile*. As, for instance, When they prove all the *radii* of a circle to be equal, by supposing one *radius* to be longer or shorter than another, and then shewing what consequences will follow. This, I confess, forces the assent, but it does not enlighten the mind, by shewing the true reason and cause why all *radii* are equal, which is derived from the very construction of a circle: For, since a circle is formed by fixing one end of a straight line in the centre, and moving the other end round, (or, which is all one, by compasses kept open to a certain extent), it follows evidently that every part of the circumference being thus described, must be equally distant from the centre, and therefore the *Radii*, which are lines from the centre to the circumference, must be all equal.

2. Geometricians

*Note, This rule chiefly refers to the establishment of some truth, rather than the refutation of error. It is a very common and useful way of arguing, to refute a false proposition, by shewing what evident falshood or absurdity will follow from it: For what proposition soever is really absurd and false, does effectually prove that principle to be false from which it is derived; so that this way of refuting an error is not so usually called *Reductio ad Absurdum*.

2. Geometricians forget this rule when they heap up many far-fetched lines, figures, and proportions to prove some plain, simple, and obvious proposition. This is called a *Demonstration per aliena et remota*, or an argument from unnatural and remote mediums: As if, in order to prove the *radii* of a circle are all equal, I should make several triangles and squares about the circle, and then from some properties and propositions of squares and triangles prove that the *radii* of a circle are equal.

Yet it must be confessed, that sometimes such questions happen, that it is hardly possible to prove them by direct arguments drawn from the nature of things, &c. and then it may not only be lawful but necessary to use indirect proofs, and arguments drawn from remote mediums, or from the absurdity of the contradictory suppositions.

Such indirect and remote arguments may also be sometimes used to confirm a proposition, which has been before proved by arguments more direct and immediate.

Rule VIII. Though arguments should give light to the subject, as well as constrain the assent, yet you must learn "to distinguish well between an explication and an argument; and neither impose upon yourselves, nor suffer yourselves to be imposed upon by others, by mistaking a mere illustration for a convincing reason.

Axioms themselves, or self-evident propositions, may want an explication or illustration, though they are not to be proved by reasoning.

Similitudes and allusions have oftentimes a very happy influence to explain some difficult truth, and to render the idea of it familiar and easy. Where the resemblance is just and accurate, the influence of a simile may proceed so far as to shew the possibility of the thing in question: But similitudes must not be taken as a solid proof of the truth or existence of those things to which they have a resemblance. A too great deference paid to similitudes, or an utter rejection of them, seem to be two extremes, and ought to be avoided. The late ingenious Mr. Locke, even in his inquiries after truth, makes great use of *similes* for frequent illustration, and is very happy in the invention of them; though he warns us also lest we mistake them for conclusive arguments.

Yet

Yet let it be noted here, that a parable or similitude used by an author may give a sufficient proof of the true sense and meaning of that author, provided that he draw not this similitude beyond the scope and design for which it was brought; as, when our Saviour affirms, *Rev.* iii. 3. *I will come on thee as a thief;* this will plainly prove that he describes the unexpectedness of his appearance, though it is by no means to be drawn to signify any injustice in his design.

Rule IX. "In your whole course of reasoning keep your mind sincerely intent on the pursuit of truth; and follow solid argument wheresoever it leads you. Let not a party spirit, nor any passion or prejudice whatsoever, stop or avert the current of your reasoning in quest of true knowledge."

When you are inquiring therefore into any subject, maintain a due regard to the arguments and objections on both sides of a question: Consider, compare, and balance them well before you determine for one side. It is a frequent, but a very faulty practice, to hunt after arguments only to make good one side of a question, and entirely to neglect and refuse those which favour the other side. If we have not given a due weight to arguments on both sides, we do but wilfully misguide our judgment, and abuse our reason, by forbidding its search after truth. When we espouse opinions by a secret bias on the mind, through the influence of fear, hope, honour, credit, interest, or any other prejudice, and then seek arguments only to support those opinions, we have neither done our duty to God, nor to ourselves, and it is a matter of mere chance if we stumble upon truth in our way to ease and preferment. The power of reasoning was given us by our Maker for this very end, to pursue truth; and we abuse one of his richest gifts, if we basely yield it up to be led astray by any of the meaner powers of nature, or the perishing interests of this life. Reason itself, if honestly obeyed, will lead us to receive the divine revelation of the gospel where it is duly proposed, and this will shew us the path of life everlasting.

THE

THE

FOURTH PART

OF

LOGIC.

Of Disposition and Method.

IT is not merely a clear and distinct idea, a well formed propoſition, or a juſt argument, that is ſufficient to ſearch out and communicate the knowledge of a ſubject. There muſt be a variety and ſeries of them diſpoſed in a due manner, in order to attain this end: And therefore it is the deſign of the laſt part of Logic to teach us the art of method. It is that muſt ſecure our thoughts from that confuſion, darkneſs, and miſtake, which unavoidably attend the meditations and diſcourſes even of the brighteſt genius who deſpiſes the rules of it.

I. We ſhall here conſider the nature of method, and the ſeveral kinds of it.

II. Lay down the general rules of method, with a few particulars under them.

CHAP.

CHAP. I.

Of the Nature of METHOD, *and the several Kinds of it, namely, Natural and arbitrary, Synthetic and Analytic.*

METHOD, taken in the largest sense, implies the placing of several things, or performing several operations in such an order, as is most convenient to attain some end proposed: And in this sense it is applied to all the works of nature and art, to all the divine affairs of creation and providence; and to the artifices, schemes, contrivances and practices of mankind, whether in natural, civil, or sacred affairs.

Now this orderly disposition of things includes the ideas of prior, posterior, and simultaneous; of superior, inferior, and equal; of beginning, end, and middle, &c. which are described more particularly among the general affections of being, in ontology.

But, in logic, method is usually taken in a more limited sense, and the nature of it is thus described: *Method is the disposition of a variety of thoughts on any subject in such order as may best serve to find out unknown truths, to explain and confirm truths that are known, or to fix them to the memory.*

It is distributed into two general kinds, namely, natural and arbitrary.

Natural method is that which observes the order of nature, and proceeds in such a manner as that the knowledge of the things which follow depends in a great measure on the things which go before, and this is twofold, *viz. synthetic* and *analytic.**

* The word analysis has three or four senses, which it may not be improper to take notice of here.

1. It signifies the general and particular heads of a discourse, with their mutual connections, both co-ordinate and subordinate, drawn out by way of abstract into one or more tables, which are frequently placed like an *index* at the beginning or end of a book.

2. It signifies the resolving of a discourse into its various subjects and arguments, as when any writing of the ancient prophets is resolved into the prophetical, historical, doctrinal, and practical parts of it; it is said to be analysed in general. When

Synthetic method is that which begins with the parts,† and leads onward to the knowledge of the whole; it begins with the moſt ſimple principles, and general truths, and proceeds by degrees to that which is drawn from them, or compounded of them: And therefore it is called the method of compoſition.

Analytic method takes the whole compound as it finds it, whether it be a ſpecies or an individual, and leads us into the knowledge of it, by reſolving it into its firſt principles or parts, its generic nature, and its ſpecial properties; and therefore it is called the method of reſolution.

As ſynthetic method is generally uſed in teaching the ſciences after they are invented, ſo analytic is moſt practiſed in finding out things unknown. Though it muſt be confeſſed that both methods are ſometimes employed to find out truth and to communicate it.

If we know the parts of any ſubject eaſier and better than the whole, we conſider the parts diſtinctly, and by putting them together, we come to the knowledge of the whole. So in grammar we learn firſt to know letters, we join

a ſentence is diſtinguiſhed into the nouns, the verbs, pronouns, adverbs, and other particles of ſpeech, which compoſe it, then it is ſaid to be analyſed grammatically. When the ſame ſentence is diſtinguiſhed into ſubject and predicate, propoſition, argument, act, object, cauſe, effect adjunct, oppoſite. &c. then it is analyſed logically and metaphyſically. This laſt is what is chiefly meant in the theological ſchools, when they ſpeak of analyſing a text of ſcripture.

3. Analyſis ſignifies particularly the ſcience of algebra, wherein a queſtion being propoſed, one or more letters, as, x, y, z, or vowels, as, a, e, i, &c. are made uſe of to ſignify the unknown number, which being intermingled with ſeveral known numbers in the queſtion, is at laſt, by the rules of art, ſeparated or releaſed from that entanglement, and its particular value is found out by ſhewing its equation or equality to ſome known number.

4. It ſignifies analytical method, as here explained in logic.

† Note, It is confeſſed that ſynthefis often begins with the genus and proceeds to the ſpecies and individuals. But the genus or generic nature is then conſidered only as a phyſical or eſſential part of the ſpecies. though it be ſometimes called an univerſal or logical whole. Thus ſynthetic method maintains its own deſcription ſtill, for it begins with the parts, and proceeds to the whole; which is compoſed of them.

join them to make syllables, out of syllables we compose words, and out of words we make sentences and discourses. So the physician and apothecary knows the nature and powers of his simples, namely, his drugs, his herbs, his minerals, &c. and putting them together, and considering their several virtues, he finds what will be the nature and powers of the bolus, or any compound medicine: This is the synthetic method.

But if we are better acquainted with the whole than we are with particular parts, then we divide or resolve the whole into its parts, and thereby gain a distinct knowledge of them. So in vulgar life we learn in the gross what plants or minerals are; and then by chemistry we gain the knowledge of salt, sulphur, spirit, water, earth, which are the principles of them. So we are first acquainted with the whole body of an animal, and then by anatomy or dissection we come to learn all the inward and outward parts of it. This is the analytic method.

According to this most general and obvious idea of synthetic and analytic method, they differ from each other as the way which leads up from a valley to a mountain differs from itself, considered as it leads down from the mountain to the valley; or, as St. Matthew and St. Luke prove *Christ to be the son of Abraham; Luke* finds it out by analysis, rising from Christ to his ancestors; Matthew teaches it in the synthetic method, beginning from Abraham, and shewing that Christ is found among his posterity. Therefore it is a useful thing in the sciences, when we have by analysis found out a truth, we use the synthetic method to explain and deliver it, and prove it to be true.

In this easy view of things, these two kinds of method may be preserved conspicuously, and entirely distinct: But the subjects of knowledge being infinite, and the ways whereby we arrive at this knowledge being almost infinitely various, it is very difficult, and almost impossible, always to maintain the precise distinction between these two methods.

This will evidently appear in the following observations.

Observ. I. The analytic method being used chiefly to find out things unknown, it is not limited or confined merely to begin with some whole subject, and proceed to the

the knowledge of its parts, but it takes its rise sometimes from any single part or property, or from any thing whatsoever that belongs to a subject which happens to be first and most easily known, and thereby inquires into the more abstruse and unknown parts, properties, causes, effects, and modes of it, whether absolute or relative: As, for instance.

(1.) Analysis finds out causes by their effects. So in the speculative part of natural philosophy, when we observe light, colours, motion, hardness, softness, and other properties and powers of bodies, or any of the common or uncommon appearances of things, either on earth or in heaven, we search out the causes of them. So by the various creatures we find out the Creator, and learn his wisdom, power and goodness.

(2.) It finds out effects by their causes. So the practical and mechanical part of natural philosophy considers such powers of motion, as the wind, the fire, and the water, &c. and then contrives what uses they may be applied to, and what will be their effects, in order to make mills and engines of various kinds.

(3.) It finds out the general and special nature of a thing, by considering the various attributes of the individuals, and observing what is common and what is proper, what is accidental, and what is essential. So by surveying the colour, the shape, motion, rest, place, solidity, and extension of bodies, we come to find that the nature of body in general is solid extension; because all other qualities of bodies are changeable; but this belongs to *all* bodies, and it endures through all changes; and because this is proper to body alone, and agrees not to any thing else; and it is the foundation of all other properties.

(4.) It finds out the remaining properties or parts of a thing, by having some parts or properties given. So the area of a triangle is found by knowing the height and the base. So by having two sides and an angle of a triangle given, we find the remaining side and angles. So when we know cogitation is the prime attribute of a spirit, we infer its immateriality, and thence its immortality.

(5.) Analysis finds the means necessary to attain a proposed end, by having the end first assigned. So in moral,

al, political, economical affairs, having propoſed the government of ſelf, a family, a ſociety, or a nation, in order to their beſt intereſt, we conſider and ſearch out what are the proper laws, rules and means to effect it. So in the practices of artificers, manufacturers of various kinds, the end being propoſed, as, making cloth, houſes, ſhips, &c. we find out ways of compoſing thoſe things for the ſeveral uſes of human life. But the putting any of theſe means in execution to attain the end, is ſynthetic method.

Many other particulars might be repreſented to ſhew the various forms of analytic method, whereby truth is found out, and ſome of them come very near to ſynthetic, ſo hardly as to be diſtinguiſhed.

Obſerv. II. Not only the inveſtigation of truth, but the communication of it alſo, is often practiſed in ſuch a method, as neither agrees preciſely to ſynthetic or analytic. Some ſciences, if you conſider the whole of them in general, are treated in ſynthetic order; ſo phyſics, or natural philoſophy, begins uſually with an account of the general nature and properties of matter or bodies, and by degrees deſcends to conſider the particular ſpecies of bodies, with their powers and properties; yet it is very evident, that when philoſophers come to particular plants and animals, then by chemiſtry and anatomy they analyſe or reſolve thoſe bodies into their ſeveral conſtituent parts. On the other hand, logic is begun in analytic method; the whole is divided into its integral parts, according to the four operations of the mind; yet here and there ſynthetic method is uſed in the particular branches of it, for it treats of ideas in general firſt, and then deſcends to the ſeveral ſpecies of them; it teaches how propoſitions are made up of ideas, and ſyllogiſms of propoſitions, which is the order of compoſition.

The ancient ſcholaſtic writers have taken a great deal of pains, and engaged in uſeleſs diſputes, about theſe two methods, and after all have not been able to give ſuch an account of them as to keep them entirely diſtinct from each other, neither in the theory nor in the practice. Some of the moderns have avoided this confuſion in ſome meaſure by confining themſelves to deſcribe almoſt nothing elſe but the ſynthetic analytic methods of geometricians

and algebraists, whereby they have too much narrowed the nature and rules of method, as though every thing were to be treated in mathematical forms.

Upon the whole, I conclude that neither of these two methods should be two scrupulously and superstitiously pursued, either in the invention or in the communication of knowledge. It is enough, if the order of nature be but observed in making the knowledge of things following depend on the knowledge of the things which go before. Oftentimes a mixed method will be found most effectual for these purposes; and indeed a wise and judicious prospect of our main end and design must regulate all method whatsoever.

Here the rules of natural method ought to be proposed, (whether it be analytic or synthetic, or mixed:) but it is proper first to give some account of arbitrary method, lest it be thrust at too great a distance from the first mention of it.

Arbitrary method leaves the order of nature, and accommodates itself to many purposes; such as, to treasure up things, and retain them in memory; to harrangue and persuade mankind to any practice in the religious or the civil life; or to delight, amuse, or entertain the mind.

As for the assistance of the memory, in most things a natural order has an happy influence; for reason itself deducing one thing from another, greatly assists the memory by the natural connexion and mutual dependence of things. But there are various other methods which mankind have made use of for this purpose, and indeed there are some subjects that can hardly be reduced either to analysis or synthesis.

In reading or writing history, some follow the order of the governors of a nation, and dispose every transaction under their particular reigns: So the sacred books of Kings and Chronicles are written. Some write in annals or journals, and make a new chapter of every year. Some put all those transactions together which relate to one subject; that is, all the affairs of one war, one league, one confederacy, one council, &c. tho' it lasted many years, and under many rulers.

So in writing the lives of men, which is called *biography*, some

some authors follow the tract of their years, and place every thing in the precise order of time when it occurred: Others throw the temper and character of the persons, their private life, their public stations, their personal occurrences, their domestic conduct, their speeches, their books or writings, their sickness and death, into so many distinct chapters.

In chronology some writers make their epochas to begin all with one letter: So in the book called *Doctor Historicus*, the periods all begin with C; as, Creation, Cataclysm, or deluge, Chaldean Empire, Cyrus, Christ, Constantine, &c. Some divide their accounts of time according to the four great monarchies; Assyrian, Persian, Grecian, and Roman. Others think it serves the memory best to divide all their subjects into the remarkable number of sevens: so Prideaux has written an introduction to history. And there is a book of divinity called *Fasciculus Controversarium*, by an author of the same name, written in the same method, wherein every controversy has seven questions belonging to it; though the order of nature seems to be too much neglected by a confinement to this septenary number.

Those writers and speakers whose chief business is to amuse or delight, to allure, terrify, or persuade mankind, do not confine themselves to any natural order, but in a cryptical or hidden method, adapt every thing to their designed end. Sometimes they omit those things which might injure their design, or grow tedious to their hearers, though they seem to have a necessary relation to the point in hand: Sometimes they add those things which have no great references to the subject, but are suited to allure or refresh the mind and the ear. They dilate sometimes, and flourish long upon little incidents, and they skip over, and but lightly touch the drier parts of their theme. They place the first things last, and the last things first, with wondrous art; and yet so manage it as to conceal their artifice, and lead the senses and passions of their hearers into a pleasing and powerful captivity.

It is chiefly poesy and oratory that require the practice of this kind of arbitrary method: They omit things essential which are not beautiful, they insert little needless circumstances,

cumſtances, and beautiful digreſſions, they invert times and actions, in order to place every thing in the moſt affecting light; and for this end, in their practice they neglect all logical forms; yet a good acquaintance with the forms of logic and natural method is of admirable uſe to thoſe who would attain theſe arts in perfection; hereby they will be able to range their own thoughts in ſuch a method and ſcheme, as to take a more large and comprehenſive ſurvey of their ſubject and deſign in all the parts of it; and by this means they will better judge what to chooſe and what to refuſe, and how to dreſs and manage the whole ſcene before them, ſo as to attain their own ends with greater glory and ſucceſs.

CHAP. II.

The Rules of METHOD, *General and Particular.*

THE general rules of true method in the purſuit or communication of knowledge, may be all compriſed under the following heads. It muſt be (1.) *Safe.* (2.) *Plain* and *eaſy.* (3) *Diſtinct.* (4.) *Full* or without *defect.* (5.) *Short* or without *ſuperfluity.* (6.) *Proper* to the *ſubject* and the *deſign.* (7.) *Connected.*

RULE I. Among all the qualifications of a good method, there is none more neceſſary and important than that it ſhould be ſafe, and ſecure from error; and to this end theſe four particular or ſpecial directions ſhould be obſerved.

1. "Uſe great care and circumſpection in laying the foundation of your diſcourſe, or your ſcheme of thoughts upon any ſubject." Thoſe propoſitions which are to ſtand as firſt principles, and on which the whole argument depends, muſt be viewed on all ſides with the utmoſt accuracy, leſt an error being admitted there, ſhould diffuſe itſelf through the whole ſubject. See therefore that your general definitions or deſcriptions are as accurate as the nature of the thing will bear: See that your general di-

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visions and distributions be just and exact, according to the rules given in the first part of logic: See that your *axioms* be sufficiently evident, so as to demand the assent of those that examine them with due attention: See that your first and more immediate consequences from these principles be well drawn; and take the same care of all other propositions that have a powerful and spreading influence, through the several parts of your discourse.

For want of this care, sometimes a large treatise has been written by a long deduction of consequences from one or two doubtful principles, which principles have been effectually refuted in a few lines, and thus the whole treatise has been destroyed at once: So the largest and fairest building sinks and tumbles to the ground, if the foundation and corner-stones of it are feeble and insufficient.

2. "It is a very advisable thing that your primary and fundamental propositions be not only evident and true, but they should be made a little familiar to the mind by dwelling upon them before you proceed farther." By this means you will gain so full an acquaintance with them, that you may draw consequences from them with much more freedom, with greater variety, brighter evidence, and with a firmer certainty, than if you have but a slight and sudden view of them.

3. "As you proceed in the connection of your arguments, see that your ground be made firm in every step." See that every link of your chain of reasoning be strong and good: For if but one link be feeble and doubtful, the whole chain of arguments feels the weakness of it, and lies exposed to every objector, and the original question remains undetermined.

4. "Draw up all your propositions and arguments with so much caution, and express your ideas with such a just limitation, as may preclude or anticipate any objections." Yet remember this is only to be done, as far as it is possible, without too much entangling the question, or introducing complicated ideas, and obscuring the sense. But if such a cautious and limited dress of the question should render the ideas too much complicated, or the sense obscure, then it is better to keep the argument more simple,

ple, clear, and eaſy to be underſtood, and afterwards mention the objections diſtinctly in their full ſtrength, and give a diſtinct anſwer to them.

Rule II. Let your method be plain and eaſy, ſo that your hearers or readers, as well as yourſelf, may run through it without embarraſſment, and may take a clear and comprehenſive view of the whole ſcheme. To this end the following particular directions will be uſeful.

1. "Begin always with thoſe things which are beſt known and moſt obvious, whereby the mind may have no difficulty or fatigue, and proceed by regular and eaſy ſteps to things that are more difficult." And as far as poſſible, let not the underſtanding, or the proof of any of your poſitions, depend on the poſitions that follow, but always on thoſe which go before. It is a matter of wonder that in ſo knowing an age as this, there ſhould be ſo many perſons offering violence daily to this rule, by teaching the Latin language by a grammar written in Latin, which method ſeems to require a perfect knowledge of an unknown tongue, in order to learn the firſt rudiments of it.

2. "Do not affect exceſſive haſte in learning or teaching any ſcience, nor hurry at once into the midſt of it, leſt you be too ſoon involved in ſeveral new and ſtrange ideas and propoſitions which cannot be well underſtood without a longer and cloſer attention to thoſe which go before." Such ſort of ſpeed is but a waſte of time, and will conſtrain you to take many ſteps backward again, if you would arrive at a regular and complete knowledge of the ſubject.

3. "Be not fond of crowding too many thoughts and reaſonings into one ſentence or paragraph, beyond the apprehenſion or capacity of your readers or hearers." There are ſome perſons of a good genius and a capacious mind, who write and ſpeak very obſcurely upon this account; they affect a long train of dependencies, before they come to a period; they imagine that they can never fill their page with too much ſenſe; but they little think how they bury their own beſt ideas in the crowd, and render them in a manner inviſible and uſeleſs to the greateſt part of mankind. Such men may be great ſcholars, yet they are but poor teachers. 4.

4. "For the same reason, avoid too many subdivisions. Contrive your scheme of thoughts in such a manner as will finish your whole argument with as few inferior branches as reason will admit; and let them be such as are obvious and open to the understanding, that they may be within one single view of the mind." This will not only assist the understanding to receive, but it will aid the memory also to retain truth: Whereas a discourse cut out into a vast multitude of gradual subordinations, has many inconveniencies in it; it gives pain to the mind and memory, in surveying and retaining the scheme of discourse, and exposes the unskilful hearer to mingle the superior and inferior particulars together; it leads them into a thick wood instead of open day-light, and places them in a labyrinth instead of a plain path.

5, "Give all diligence in your younger years to obtain a clear and easy way of expressing your conceptions, that your words, as fast as you utter them, may stamp your own ideas exactly on the mind of the hearer." This is a most happy talent for the conveyance of truth, and an excellent security against mistakes and needless controversies.

RULE III. Let your method be distinct, and without the perplexing mixture of things that ought to be kept separate, and this will be easily practised by four directions.

1. "Do not bring unnecessary or *heterogeneous matter into your discourse on any subject; that is, do not mingle an argument on one subject with matters that relate entirely to another, but just so far as is necessary to give a clearer knowledge of the subject in hand." Examples in logic may be borrowed from any of the sciences to illustrate the rules; But long interpositions of natural philosophy, of the imagination and passions, of agency of spirits united to bodies, &c. break the thread of discourse, and perplex the subject.

2. "Let every complicated theme or idea be divided into its distinct single parts, as far as the nature of the subject and your present design requires it." Though you

* Things of one kind are called homogeneous, things of different kinds are heterogeneous.

you must not abound in needless subdivisions, yet something of this work is very necessary; and it is a good judgment alone can dictate how far to proceed in it, and when to stop.

Compound ideas must be reduced to a simple form in order to understand them well. You may easily master that subject in all the parts of it by a regular succession, which would confound the understanding to survey them at once. So we come to the knowledge of a very perplexed diagram in geometry, or a complicated machine in mechanics, by having it parcelled out to us in its several parts and principles, according to this and the foregoing rule of method.

3. "Call every idea, proposition and argument to its proper class, and keep each part of the subject in its own place. Put those things all together that belong to one part or property, one consideration or view of your subject." This will prevent needless repetitions, and keep you from intermixing things which are different. We must maintain this distinction of things and places if we would be safe from error. It is confusion that leads us into endless mistakes, which naturally arise from a variety of ideas ill-joined, ill-sorted, or ill-disposed. It is one great use of method, that a multitude of thoughts and propositions may be so distinctly ranged in their proper situations, that the mind may not be overwhelmed with a confused attention to them all at once, nor be distracted with their variety, nor be tempted to unite things which ought to be separated, nor to disjoin things which should be united.

4. "In the partition of your discourse into distinct heads, take heed that your particulars do not interfere with the generals, nor with each other." Think it is not enough that you make use of distinct expressions in each particular, but take care that the ideas be distinct also. It is mere foolery to multiply distinct particulars in treating of *things*, where the difference of your particulars lies only in *names* and *words*.

Rule IV. The method of treating a subject should be plenary or full, so that nothing may be wanting; nothing which is necessary or proper should be omitted.

When

When you are called to explain a ſubject, do not paſs by, nor ſkip over any thing in it which is very difficult or obſcure.

When you enumerate the parts or the properties of any ſubject, do it in a complete and comprehenſive manner.

When you are aſſerting or proving any truth, ſee that every doubtful or diſputable part of the argument be well ſupported and confirmed.

If you are to illuſtrate or argue a point of difficulty, be not too ſcanty of words, but rather become a little copious and diffuſive in your language: Set the truth before the reader in ſeveral lights, turn the various ſides of it to view, in order to give a full idea and firm evidence of the propoſition.

When you are drawing up a narrative of any matter of fact, ſee that no important circumſtances be omitted.

When you propoſe the ſolution of any difficulty, conſider all the various caſes wherein it can happen, and ſhew how they may be ſolved.

In ſhort, let your enumerations, your diviſions, and diſtributions of things, be ſo accurate, that no needful idea or part may be left out.

This fulneſs of method does not require that every thing ſhould be ſaid which can be ſaid upon any ſubject; for this would make each ſingle ſcience endleſs; But you ſhould ſay every thing which is neceſſary to the deſign in view, and which has a proper and direct tendency to this end; always proportioning the amplitude of your matter, and the fulneſs of your diſcourſe, to your great deſign, to the length of your time, to the convenience, delight, and profit of your hearers.

Rule V. As your method muſt be full without deficiency, ſo it muſt be ſhort, or without ſuperfluity. The fulneſs of a diſcourſe enlarges our knowledge, and the well concerted brevity ſaves our time. In order to obſerve this rule, it will be enough to point out the chief of thoſe ſuperfluities or redundancies, which ſome perſons are guilty of in their diſcourſes, with a due caution againſt them.

1. "Avoid all needleſs repetitions of the ſame thing in different parts of your diſcourſe." It muſt be confeſſed there are ſeveral caſes wherein a review of ſome foregoing

propoſition is needful to explain or prove ſeveral of the following poſitions; but let your method be ſo contrived, as far as poſſible, that it may occaſion the feweſt rehearſals of the ſame thing; for it is not grateful to the hearers, without evident neceſſity.

2. "Have a care of tedious prolixity, or drawing out any part of your diſcourſe to an unneceſſary & tireſome length." It is much more honourable for an inſtructor, an orator, a pleader, or a preacher, that his hearers ſhould ſay, I was afraid he would have done, than that they ſhould be tempted to ſhew ſigns of uneaſineſs, and long for the concluſion.

Beſides, there is another inconvenience in it; when you affect to amplify on the former branches of a diſcourſe, you will often lay a neceſſity upon yourſelf of contracting the latter and moſt uſeful parts of it, and perhaps prevent yourſelf in the moſt important part of your deſign. Many a preacher has been guilty of this fault in former days; nor is the preſent age without ſome inſtances of this weakneſs.

3. Do not multiply explications where there is no difficulty, or darkneſs, or danger of miſtake." Be not fond of tracing every word of your theme, through all the grammatical, the logical and metaphyſical characters and relations of it; nor ſhew your critical learning in ſpreading abroad the various ſenſes of a word, and the various origins of thoſe ſenſes, the etymology of terms, the ſynonymous and the paronymous or kindred names, *&c.* where the chief point of diſcourſe does not at all require it. You would laugh at a pedant, who profeſſing to explain the Athanaſian creed, ſhould acquaint you that Athanaſius is derived from a Greek word, which ſignifies immortality, and that the ſame word Athanaſia ſignifies alſo the herb *tanſy*.

There are ſome perſons ſo fond of their learned diſtinctions, that they will ſhew their ſubtilty by diſtinguiſhing where there is no difference. And the ſame ſilly affectation will introduce diſtinctions upon every occurrence, and bring three or four negatives upon every ſubject of diſcourſe; firſt to declare what it is not, and then what it is: Whereas ſuch negatives ought never to be mentioned where there is no apparent danger of miſtake. How ridiculous

diculous would that writer, who, if he were speaking of the Nicene creed, should declare negatively, (1.) That he did not mean the doctrine which the inhabitants of Nice believed; nor, (2.) A creed written by them; but, (3.) Positively, a creed composed by several Christian bishops met together in the city of Nice? The positive is sufficient here, and the two negatives are impertinent.

4. "Be not fond of proving those things which need no proof." Such as self-evident propositions and truths universally confessed, or such as are entirely agreed to and granted by our opponents. It is this vain affection of proving every thing that has led geometricians to form useless and intricate demonstrations to support some theorems, which are sufficiently evident to the eye by inspection; or to the mind by the first mention of them; and it is the same humour that reigns sometimes in the pulpit, and spends half the sermon in proving some general truth which is never disputed or doubted, and thereby robs the auditory of more useful entertainment.

5. As there are some things so evidently true, that they want no proof, so there are others so evidently false, that they want no refutation. It is mere trifling, and a waste of our precious moments, to invent and raise such objections as no man would ever make in earnest, and that merely for the sake of answering and solving them: This breaks in notoriously upon the due brevity of method.

6. "Avoid in general all learned forms, all trappings of art, and ceremonies of the schools, where there is no need of them." It is reported concerning the late Czar of Muscovy, that when he first acquainted himself with mathematical learning, he practised all the rules of circumvallation and contravallation, and the siege of a town in Livonia; and by the length of those formalties he lost the opportunity of taking the town.

7. "Do not suffer every occasional and incidental thought to carry you away into a long parenthesis, and thus to stretch out your discourse, and divert you from the point in hand." In the pursuit of your subject, if any useful thought occur which belongs to some other theme, note it down for the sake of your memory on some other paper, and lay it by in reserve for its proper place and season:

ſon: But let it not incorporate itſelf with your preſent theme, nor draw off your mind from your main buſineſs, though it ſhould be ever ſo inviting. A man, who walks directly but ſlowly towards his journey's end, will arrive thither much ſooner than his neighbour, who runs into every crooked turning which he meets, and wanders aſide to gaze at every thing that ſtrikes his eyes by the way, or to gather every gaudy flower that grows by the ſide of the road.

To ſum up all: "There is a happy medium to be obſerved in our method, ſo that the brevity may not render the ſenſe obſcure, nor the argument feeble, nor our knowledge merely ſuperficial: And, on the other hand, that the fulneſs and copiouſneſs of our method may not waſte the time, tire the learner, or fill the mind with trifles and impertinencies."

The copious and the contracted way of writing have each their peculiar advantages. There is a proper uſe to be made of large paraphraſes, and full, particular, and diffuſive explications and arguments; theſe are fitteſt for thoſe who deſign to be acquainted thoroughly with every part of the ſubject. There is alſo an uſe of ſhorter hints, abſtracts, and compendiums, to inſtruct thoſe who ſeek only a ſlight and general knowledge, as well as to refreſh the memory of thoſe who have learned the ſcience already, and gone through a large ſcheme. But it is a groſs abuſe of theſe various methods of inſtruction, when a perſon has read a mere compendium or epitome of any ſcience, and he vainly imagines that he underſtands the whole ſcience. So one boy may become a philoſopher by reading over the mere dry definitions and diviſions of *Scheibler's Compendium of Peripateticiſm*: So another may boaſt that he underſtands *anatomy* becauſe he has ſeen a ſkeleton; and a third profeſs himſelf a learned divine, when he can repeat the apoſtles creed.

RULE VI. "Take care that your method be proper to the ſubject in hand, proper to your preſent deſign, as well as proper to *the age* and *place* wherein you dwell."

1. Let your method be proper to the ſubject. All ſciences muſt not be learned or taught in one method. Morality

rality and theology, metaphyſics and logic, will not be eaſily and happily reduced to ſtrict mathematical method: Thoſe who have tried, have found much inconvenience therein.

Some things have more need to be *explained* than to be proved; as axioms, or ſelf-evident propoſitions; and indeed all the firſt great principles, the chief and moſt important doctrines both of natural and revealed religion; for, when the ſenſe of them is clearly explained, they appear ſo evident in the light of nature or ſcripture, that they want no other proof. There are other things that ſtand in need of proof, as well as explication, as many mathematical theorems, and ſeveral deep controverſies in morality and divinity. There are yet other ſorts of ſubjects which want rather to be warmly impreſſed upon the mind by fervent exhortations, and ſtand in more need of this than they do either of proof or explication; ſuch are the moſt general, plain and obvious duties of piety towards God, and love towards men, with the governments of all our inclinations and paſſions. Now theſe ſeveral ſubjects ought to be treated in a different manner and method.

Again, there are ſome ſubjects in the ſame treatiſe which are more uſeful and neceſſary than others, and ſome parts of a ſubject which are eminently and chiefly deſigned by a writer or ſpeaker: True method will teach us to dwell longer upon theſe themes, and to lay out more thought and labour upon them; whereas the ſame art of method will teach us to cut ſhort thoſe things which are uſed only to introduce our main ſubject, and to ſtand as ſcaffolding merely to aid the ſtructure of our diſcourſe. It will teach us alſo to content ourſelves with brief hints of thoſe matters which are merely occaſional and incidental.

2. Your method muſt be adjuſted by your deſign; for if you treat of the ſame ſubject with two different views and deſigns, you will find it neceſſary to uſe different methods. Suppoſe the doctrine of the ſacred Trinity were your theme, and you were to read a lecture to young ſtudents on that ſubject, or if you deſigned a treatiſe for the conviction of learned men, you would purſue a very different method from that which would be proper to re-

gulate a practical discourse or a sermon to instruct common christians merely in the pious improvement of this doctrine, and awaken them to the duties which are derived thence.

In short; we must not first lay down certain and precise rules of method, and resolve to confine the matter we discourse of to that particular form and order of topics; but we must well consider, and study the subject of our discourse thoroughly, and take a just survey of our present design, and these will give sufficient hints of the particular form and order in which we should handle it, provided that we are moderately skilled in the general laws of method and order.

Yet let it be noted here, that neither the subject, nor matter of a discourse, nor the particular design of it, can so precisely determine the method, as to leave no room for liberty and variety. The very same theme may be handled, and that also with the same design, in several different methods, among which it is hard to say which is the best. In writing a system of divinity, some begin with the scriptures, and thence deduce all other doctrines and duties. Some begin with the being of God and his attributes, so far as he is known by the light of nature, and then proceed to the doctrines of revelation. Some distinguish the whole subject into the credenda and agenda, that is, Things to be believed, and things to be done. Some think it best to explain the whole Christian religion by an historical detail of all the discoveries which God has made of himself to this lower world, beginning at the *creation* in the first chapter of Genesis, and so proceeding onward according to the narrative of the Old and New Testament. And there are others that endeavour to include the whole of religion under these four heads, namely, *The apostles creed, the Lord's prayer, the ten commandments, and the two sacraments*; though I cannot but think this is the least accurate of any. The same variety may be allowed in treating other subjects. This very *treatise of logic* is an instance of it, whose method differs very considerably from any others which I have seen, as they differ also greatly from one another, though several of them are confessed to be well written.

3. Though

3. Though a just view of our subject and our design may dictate proper rules of natural method, yet there must be some little difference at least paid to the custom of the age wherein we live, and to the humour and genius of our readers or hearers; which if we utterly reject and disdain, our performance will fail of the desired success, even though we may have followed the just rules of method. I will mention but this one instance: In the former century it was frequent with learned men to divide their theme or subject into a great multitude of co-ordinate members or parts, they abounded also in the forms of logic and distinction, and indulged numerous ranks of subordination. Now, though we ought not to abandon the rules of just method and division, in order to comport with the modish writers in our age who have renounced them, yet it is prudent to pay so much respect to the custom of the age, as to use these forms of division with due moderation, and not affect to multiply them in such a manner, as to give an early and needless disgust to the generality of your present readers. The same may be said concerning various other methods of conduct in the affairs of learning, as well as the affairs of life, wherein we must indulge a little to custom: And yet we must by no means suffer ourselves so far to be imposed upon and governed by it as to neglect those rules of method which are necessary for the safe, easy, and complete inquiry into truth, or the ready and effectual communication of it to others.

Rule VII. The last requisite of method is, that the parts of a discourse should be well connected; and these three short directions will suffice for this purpose.

1. "Keep your main end and design ever in view, and let all the parts of your discourse have a tendency towards it, and as far as possible make that tendency visible all the way:" Otherwise the readers or hearers will have reason to wonder for what end that or this particular was introduced."

2. "Let the mutual relation and dependence of the several branches of your discourse be so just and evident, that every part may naturally lead onward to the next, without

without any huge chasms or breaks which interrupt and deform the scheme." The connexion of truths should arise and appear in their successive rank and order, as the several parts of a fine prospect ascend just behind each other, in their natural and regular elevations and distances, and invite the eye to climb onward with constant pleasure till it reach the sky. Whatsoever horrid beauty a precipice or a cataract may add to the prospect of a country, yet such sort of hideous and abrupt appearances in a scene of reasoning are real blemishes and not beauties. When the reader is passing over such a treatise, he often finds a wide vacancy, and makes an uneasy stop, and knows not how to transport his thoughts over to the next particular, for want of some clue or connecting idea to lay hold of.

3. "Acquaint yourself with all the proper and decent forms of transition from one part of a discourse to another, and practise them as occasion offers." Where the ideas, propositions and arguments, are happily disposed, and well connected, the truth indeed is secure; but it renders the discourse much more agreeable, when proper and graceful expression joins the parts of it together in so entertaining a manner, that the reader knows not how to leave off till he hath arrived at the end.

These are the general and most important rules of true METHOD; and though they belong chiefly to the communication of knowledge, yet an early and thorough acquaintance with them will be of considerable use toward the pursuit and attainment of it.

Those persons who have never any occasion to communicate knowledge by writing or by public discourses, may also with great advantage peruse these rules of method, that they may learn to judge with justice and accuracy concerning the performances of others. And besides, a good acquaintance with method, will greatly assist every one in ranging, disposing and managing all human affairs.

The *particular means* or *method* for a farther improvement of the understanding are very various, such as *meditation, reading, conversing, disputing by speech or by writing, question and answer*, &c. And in each of these practices some-

ome special forms may be observed, and special rules may be given to facilitate and secure our inquiries after truth: But this would require a little volume by itself, and a treatise of *logic* has always been esteemed sufficiently complete without it.

THE END.